

Political Paradigms in American History:
A Theory and Preliminary Empirical Analysis

By

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To Mary, Billy, and Elizabeth,
whose personal sacrifices made this work possible,
and whose love and inspiration made it enjoyable.

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POLITICAL PARADIGMS IN AMERICAN HISTORY:
A THEORY AND PRELIMINARY EMPIRICAL ANALYSIS

By

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This dissertation reports the development of a theory of paradigm formation in American political history. The theory of political paradigms is derived from Thomas S. Kuhn's theory of scientific paradigms. The theory is shown to integrate seemingly contradictory conclusions of two traditional theories of political history and four behavioral theories of individual political behavior. ✓

A research design for preliminary empirical assessment of the validity of the theory is discussed, and five hypotheses are developed to be subjected to empirical analysis. The first stage of empirical research develops an inductive typology of American presidential elections from 1860-1968 through application of the statistical techniques of alpha factor analysis

and hierarchical cluster analysis. The inductively derived election types are then subjected to a stepwise multiple discriminant analysis to determine the relationship of the types to observed patterns of social, political, public policy, economic, intellectual, and technological change. The results support the hypothesis that paradigm shifts coincide with periods of societal crisis and ideological conflict. Methodological caveats to the interpretation of the results are discussed.

The general conclusion reached in this dissertation is that American political history since 1860 has been characterized by sequences of shifting ideological paradigms. The dissertation concludes with an analysis of the implications of the theory of political paradigms for the future of the American political community.

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CHAPTER ONE

THEORIES OF AMERICAN HISTORY
AND AMERICAN POLITICS

For more than twenty years the discipline of political science has been involved in what some observers feel is a crisis of epistemology. The discipline has split into two camps that have come to be known as "traditionalists" and "behavioralists." While the two schools differ on many points, a clear point of dichotomy has been their selection of research techniques.¹ Traditionalists tend to employ popular forms of historical analysis, e.g., vicarious participant observation, and to chronicle their findings after application of their individually developed standards of reason. Behavioralists tend to abhor the "subjectivity" of the traditional approach, and prefer to rely on more structurally developed standards of verification, such as the principles of mathematical statistics. In this first chapter, theories of American history and American politics developed by scholars of both schools will be compared, and their degree of theoretical overlap, despite their differences in method of development, will be examined.

Ideological Consensus and Environmental Determinism

One area of theoretical overlap appears to exist between traditional theories of an ideological consensus in American history and behavioral theories of environmentally determined voting behavior. Discussion of this overlap will follow a brief exposition of the content of the respective theories.

Traditional Theories of Ideological Consensus

The main tenet of the "Consensus" school of historians and traditional political scientists is that American political history is best understood in terms of a common ideological consensus that has maintained the integrity of the American political community throughout its near two hundred-year continuity. These theorists argue that those who focus their attention on internal political conflict ignore the boundaries of that conflict laid out by the "basic American consensus." This primary tenet has been succinctly stated by Richard Hofstadter:

Societies ... (like the United States) ... have a kind of mute organic consistency. They do not foster ideas that are hostile to their fundamental working arrangements. Such ideas may appear, but they are slowly and persistently insulated They are confined to small groups of dissenters and alienated intellectuals, and except in revolutionary times they do not circulate among practical politicians. The range of ideas, therefore, which practical politicians can conveniently believe in is normally limited by the climate of opinion that sustains their culture.²

But while consensus theorists agree on this basic point, they offer a wide variety of opinion as to the actual content of the "basic consensus."

Hofstadter finds longitudinal ideological consistency based on economic beliefs:

The fierceness of the political struggles has often been misleading, for the range of vision embraced by the primary contestants in the major parties has always been bounded by the horizons of property and free enterprise. However much at odds on specific issues, the major political traditions (of the parties) have shared a belief in the rights of property, the philosophy of economic individualism, the value of competition; they have accepted the economic virtues of capitalist culture as necessary qualities of man.³

Thus for Hofstadter, the primacy of the capitalist ideal has been the sustaining force in American history.

Another interpretation is offered by Louis Hartz. Hartz feels that the cohesiveness of the American community relates to two factors of its early developmental period: the absence of feudalism to kindle a revolutionary tradition (in the sense of the French Revolution), and the early importation and dominance of the philosophical ideals of John Locke.⁴ For Hartz, "the American tradition," or ideology, consists of the Lockian conception of the natural rights of man to life, liberty, and (as amended by Jefferson) the pursuit of happiness. The absence of feudalism permitted these ideals to spread throughout the new nation and to take hold unchallenged by remnants of philosophies of divine right. The "liberal tradition" that developed in this manner, Hartz argues,

has provided the fiber that has bound the nation together through its history. Thus Hartz' conception of the "basic American consensus" differs somewhat in substance with that proposed by Hofstadter.

Still another consensus historian, Daniel Boorstin, has proposed that the American consensus is basically an anti-philosophy. In his own description, the consensus is:

an unspoken assumption, an axiom, so basic to our thinking that we have hardly been aware of it at all. This is the axiom that institutions are not and should not be the grand creations of men toward large ends and outspoken values; rather they are organisms which grow out of the soil in which they are rooted and out of the tradition from which they have sprung. ... We have become the exemplars of the continuity of history ... ⁵

The American tradition for Boorstin lies in a national sense of "givenness," a self-conceptualized destiny that adapts itself to the particular circumstances of its age. Boorstin thus veers closely toward an environmentalist view of history, as he himself indicates:

If we have learned anything from our history it is... the value of both environmentalism and traditionalism as principles of political life, as ways of saving ourselves from the imbecilities, the vagaries and the cosmic enthusiasms of individual men. ⁶

Thus Boorstin argues that what has held the nation together is not a set of defined political ideals, but rather an adaptability to environment.

The strength of the American nation developed as this adaptability was put to the test in the opening of geographical frontiers. The

Boorstinian conception of the American consensus is not a set of values, but a historical fact of life. Indeed Boorstin argues that it would be futile to try to export an "American" philosophy, for none

such exists as an exportable commodity. America, for Boorstin, is an historical accident.

While offering divergent opinions on the content of the American consensus, the consensus theorists are in fundamental agreement that some form of ideological (or anti-ideological) consistency has dominated our political history. Before turning to the arguments of other traditionalists who contradict the consensus school of history, the theoretical overlap between traditional consensus scholars and behavioral environmental determinists will be examined.

Behavioral Theories of Environmental Determinism

An area of American politics that has received much attention from behaviorally oriented scholars is that of the rationale behind the individual voting decision. One school of behavioralists argue that the voting decision is primarily a subconscious act, determined by the individual's environment at some time in the present or past.

The precise environment is not uniformly agreed upon, and at least three alternative theories of environmental determinism have been proposed.

The first of these theories appeared in Paul F. Lazarsfeld, Bernard R. Berelson and Hazel Gaudet's The People's Choice, an analysis of voting behavior in an Ohio county during the 1940 presidential campaign. In this work, and in its sequel, Voting,

which analyzed the 1948 voting decisions of 1,000 citizens of Elmira, New York, Lazarsfeld and his associates argued that the voting decision primarily reflected three factors of the individual's immediate environment: his socioeconomic status, his religion, and his place of residence (urban-rural). Ideological conflict was not apparent to any significant extent as affecting the voting decision.

The Columbia University-based Lazarsfeld studies were followed by two studies produced by scholars at the University of Michigan Survey Research Center (SRC). In The Voter Decides and The American Voter, Angus Campbell, Phillip E. Converse, Warren E. Miller, and Donald E. Stokes analyzed the comparative impact of party identification, candidate orientation, and issue orientation on the voting decisions of a nationwide sample of citizens in the elections of 1948, 1952, and 1956. The results of these studies showed that an enduring party identification, formed early in life and generally in a family environment, was the greatest single determinant of the voting decision. Like the Lazarsfeld studies, Campbell and his associates argued that the electorate paid little attention to issues or ideological differences between the parties:

In general, people pay much less attention to political events and issues than is commonly realized. ... Many people fail to appreciate that an issue exists, others are insufficiently involved to pay attention to recognized issues, and still others fail to make connections between issue positions and party policy.⁷

In the phenomenon of party identification, the Michigan analysts argued that the environment with the greatest effect on the individual voter was not his immediate surroundings, as Lazarsfeld suggested, but rather his childhood and early adulthood, in which he was "politicized" to one party or another. In essence, the Michigan analysts substituted a social psychological 'determinism' for the Columbia analysts' sociological determinism.

Still one other deterministic theory of voting behavior has been put forth, by psychiatrist Richard E. Renneker. Renneker analyzed clinical reports on neurotic patients undergoing psychoanalysis during the 1948, 1952, and 1956 elections in conjunction with information on their voting decisions. He concluded that "father identification" was a critical subconscious determinant of candidate choice, and asserted that the political significance of this phenomenon derived from the fact that the presidential candidate is commonly regarded by the subconscious as a father substitute.⁸

These three theories of voting behavior, while differing on the precise environmental factors involved, are in agreement that the voting decision is primarily a subconscious act. The congruence of these theories with the traditional ideological consensus theories can now be examined.

Ideological Consensus and Environmental Determinism: Theoretical Overlap

The relationship of the ideological consensus theories to environmental determinism was earlier alluded to by Boorstin.

If the political community is indeed dominated by a single dominant ideology throughout history, then political conflict must take its roots in some other form of social or psychological cleavage. The authors of Voting clearly subscribed to a consensus theory of political history, for they concluded their volume with a quote from Cobban:

... For a century and a half the Western democracies have been living on the stock of basic political ideas that were last restated toward the end of the eighteenth century.⁹

Thus these divergent theories of American history and American politics, developed by schools of diverse epistemological standards and methods, are found to be mutually reliant. The ideological consensus theory requires a phenomenon to account for political conflict, and environmental determinism provides that source.

Environmental determinism, on the other hand, denies the existence of widespread ideological conflict, and the existence of a historically dominant ideology (or anti-ideology) accounts for the lack of conscious interest in issues by the electorate. These two sets of theories then present a unified view of American history and American politics as ideologically dormant. This view, however, is contradicted by competing elements within both schools, and this competition is examined in the following section.

Ideological Conflict and Rational Action

Another area of theoretical overlap between the traditional and behavioral schools of political sciences lies between traditional theories of historical ideological conflict and behavioral theories of rational action in voting behavior. A brief discussion of these theories will precede analysis of the overlap.

Traditional Theories of Historical Ideological Conflict

The traditionalist school of historical ideological conflict counters the argument of the consensus theorists that American history is dominated by a commitment to a single ideology. In general, the "conflict" theorists argue that American political history has been characterized by competition between two competing ideologies, one springing from the humanitarian philosophy of the Enlightenment, and the other descending from the British philosophy of laissez-faire. This argument, first made explicit by Vernon Louis Parrington in his classic, Main Currents in American Thought, developed into a school of history that views American history as a series of sequences in which one of these competing ideologies dominated political life. Parrington, analyzing the historical period from 1790-1920, discerned three successive periods in which one of these philosophies held sway:

the humanitarianism of Jeffersonian liberalism, which lasted from 1790 until 1828; the individualism of Jacksonian democracy, which endured until the end of the century; and finally a return to humanism with Progressivism, which dominated until the election of Harding in 1920.

Merle Curti, another conflict theorist, looked for periods of ideological transition in the 1800-1950 time span, and identified five eras in which he argued that a single ideology maintained dominance: 1800-1830, dominated by "particisan" ideals; 1830-1850, dominated by "equalitarianism"; 1850-1870, the period of triumphant nationalism; 1870-1900, the dominance of corporate individualism; and 1900-1950, a period of diversion, criticism, and contraction dominated by widespread pessimism and uncertainty, with no positive ideological theme. ¹⁰ And Theodore Lowi, in a more recent analysis, cut a broader swath through history and outlined three dominant "public philosophies" from 1776-1967: 1776-1890, a period of laissez-faire capitalism; 1890-1932, a period of conflict between capitalism and pluralism; and 1932-1967, a period of interest-group liberalism. ¹¹

These three conflict theorists obviously do not concur, except in very broad outline, in what philosophies dominated what period of American history, just as the consensus theorists

did not agree on the precise content of consensus. The conflict theorists, however, share the belief that American history has been characterized by competition between systems of philosophical political beliefs, and that within periods of ideological dominance politics adheres to the tenets of the currently dominant belief system rather than to some historically dominant system. Such a theory of history, however, requires that the community contain some mechanism for the transfer of belief systems, and this is where the traditional theory of ideological conflict can be seen to overlap with behavioral theories of rational action.

Behavioral Theories of Rational Action

Just as traditionalist scholars disagreed on the role of ideology in American history, behavioral scholars disagree on its role in the individual voting decision. A competing theory of voting behavior, termed the "rational actor" theory, has arisen among behavioralists to challenge the theories of the environmental determinists.

In idealized form, the rational actor theory sees the voter as comparing the stands of the parties and candidates with his personal ideology, and making his choice consciously on that basis. Perhaps the foremost proponent of the rational actor theory in

political science was the late V. O. Key, Jr. Key and Frank Munger were among the first to criticize the social determinism of the Lazarsfeld studies. In an analysis of historical voting patterns in Indiana, they concluded:

Yet there seems to be always a very considerable part of the electorate for which no readily isolable social characteristic 'explains' political preference. The query may be raised whether a rather serious void does not exist in the (social determinist) theory. ¹²

Another critic of the environmental determinists attacked their method of determining the issue orientations of the electorate. In rather straightforward terms, E. E. Schattschneider counseled:

One implication of public opinion studies ought to be resisted ... the implication that democracy is a failure because the people are too ignorant to answer intelligently all the questions asked by the pollsters. This is a professorial invention for imposing professorial standards on the political system, and deserves to be treated with extreme suspicion. Only a pedagogue would suppose that the people must pass some kind of examination to qualify for participation in democracy. Who, after all, are these self-appointed censors who assume that they are in a position to flunk the whole human race? ¹³

Beginning in the mid-1960s with publication of Key's, The Responsible Electorate, a new body of literature has developed to support the rational action thesis of voting behavior. Key stated the principles of the rational action thesis succinctly:

The perverse and unorthodox argument ... is that voters are not fools. To be sure, many individual voters act in odd ways indeed; yet in the large the electorate behaves about as rationally

and responsibly as we should expect, given the clarity of the alternatives presented to it and the character of the information available to it.¹⁴

Using survey data dating back to 1936 from the Gallup and Roper polls, Key analyzed the relationship of individual voting decisions to opinions on issues and concluded:

In American presidential campaigns of recent decades the portrait of the American electorate that develops from the data is not one of an electorate straight-jacketed by social determinants or moved by subconscious urges It is rather one of an electorate moved by concern about central and relevant questions of public policy, of governmental performance, and of executive personality.¹⁵

Findings similar to Key's have begun to appear with regularity in professional journals and at professional meetings. An extensive analysis of voting behavior in the 1968 presidential election was carried out by the University of North Carolina Comparative State Elections Project. While the complete results of that study will be published in a forthcoming monograph, preliminary findings tend to provide support for the rationality of the individual voter. The North Carolina analysts analyzed the voter's perceived proximity to each of the candidates in terms of issues, party, liberalism-conservatism, and social status. Using statistical causal modeling techniques to control for spurious relationships, they found issue proximity to be the most effective indicator of the vote where

conditions permitted issues to be used. The concluding comments of a preliminary report stated:

If our preliminary findings do not transform our picture of the American voter from that of the automaton ... to that of the rational hero of the civics books, we think that they certainly suggest that issues can and did "count," and that not a few of those who voted in November, 1968 were behaving rationally or, more likely, that many of them were behaving with more than a modicum of rationality.¹⁶

Secondary analysis of Survey Research Center data by David E. Repass tended to contradict the deterministic findings developed from those same data by the SRC analysts. Repass utilized the technique of searching open-ended interview material for clues to determine which issues were salient to individual voters, thereby avoiding the "professorial fallacy" alluded to earlier by Schattschneider. In analyzing the SRC survey for the 1964 election, Repass found that large numbers of voters accurately perceived party differences on issues that were salient to them, and cast their vote accordingly.¹⁷ These findings raise the question of how sensitive survey research-based conclusions are to the types of questions employed in the analysis.

While still other examples of recent research supporting the rational voter theory could be described,¹⁸ the research alluded to above seems sufficient to document the position that a school of behavioralism has developed that challenges

the environmentalist findings discussed earlier. The relationship of this school of behavioralists to the ideological conflict school of traditionalists will now be examined.

Ideological Conflict and Rational Action: Theoretical Overlap

As the theories of ideological consensus and environmental determinism were shown to be mutually dependent, a similar relationship exists between theories of ideological conflict and rational action. And, as previously, this relationship was recognized by a proponent of one of the theories involved. Key recognized that if issues and ideology were to be found evident in determining individual voting decisions, then the aggregated decisions must contain elements of issue-oriented or ideological conflict. He attacked those who put forth the consensus theory of American history:

The concept of consensus serves as a handy crutch for those who seek to explain ... the American political system... . The magic word "consensus!" in short solves many puzzles, but only infrequently is the term given precise meaning. Even less often are inquiries made about the distribution among the population of whatever attitudes, beliefs, or behaviors constitute consensus.¹⁹

The mutual dependence of the theories of ideological and rational action is readily discerned. If ideological changes in the theory of government are observed, then some mechanism

in society must be responsible for effecting the change. The voting mechanism can fulfill that function only if the individual voter is found to base his decision on consideration of issues.

And if the individual voter is found to base his decision on the issues, then ideological conflict would be expected to occur at the aggregated, or national, level. The coalescence of the theories of ideological conflict and rational action then provides us with a second view of American history and American politics that contradicts the view presented earlier by analyzing the integration of the theories of ideological consensus and environmental determinism.

Thus the student appears to be faced with a dichotomous choice of interpretations of American history. In the next chapter, an alternative theory of American political development will be proposed, and it will be argued that this alternative theory is capable of integrating and assimilating many of the theoretical differences between the two views of American history presented in this chapter.

NOTES

1. For examples of both the breadth of the split and its historical longevity, see the following: Gabriel Almond, Lewis Dexter, William Whyte, and John Hamilton Hallowell, "Politics and Ethics: A Symposium," American Political Science Review XL (1946), 283-312; David Smith, David Apter, and Arnold Rogow, "A Symposium," American Political Science Review LI (1957), 734-775; Heinz Eulau, The Behavioral Persuasion in Politics (New York: Random House, 1963); and Christian Bay, "Politics and Pseudopolitics," American Political Science Review LXIX (1965), 39-51.
2. Richard Hofstadter, The American Political Tradition (New York: Knopf, 1948), viii-ix. ✓
3. Ibid., viii.
4. Louis Hartz, The Liberal Tradition in America (New York: Harcourt, Brace, 1955), Chapter 1.
5. Daniel Boorstin, The Genius of American Politics (Chicago: U. of Chicago Press. 1953), 6.
6. Ibid., 185-186.
7. Angus Campbell, Phillip E. Converse, Warren E. Miller, and Donald E. Stokes, The American Voter (New York: Wiley, 1960), 182-183.
8. Richard E. Renneker, "Some Psychodynamic Aspects of Voting Behavior," in Eugene Burdick and Arthur J. Brodbeck, eds., American Voting Behavior (New York: Free Press, 1959), 404.
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10. Merle Curti, The Growth of American Thought (New York: Harper, Second Edition, 1951).
11. Theodore Lowi, The End of Liberalism (New York: Norton, 1969).

12. V. O. Key, Jr., and Frank Munger, "Social Determinism and Electoral Decision," in Burdick and Brodbeck, op. cit., 298.
13. E. E. Schattschneider, The Semi-Sovereign People (New York: Holt, Rinehart, and Winston, 1960), 135.
14. V. O. Key, Jr., The Responsible Electorate (Cambridge: Harvard U. Press, 1966), 7.
15. Ibid., 7-8.
16. David M. Kovenock, Phillip L. Beardsley, and James W. Prothro, "Status, Party, Ideology, Issues, and Candidate Choice: A Preliminary, Theory Relevant Analysis of the 1968 American Presidential Election," presented at the Eighth World Congress of the International Political Science Association, Munich, Germany, August 31-September 5, 1970, 22.
17. David E. Repass, "Issue Salience and Party Choice," American Political Science Review LXV (1971), 389-400.
18. For other examples of research demonstrating at least the partial rationality of the voter see: Gerald Kramer, "Short-Term Fluctuations in U.S. Voting Behavior, 1896-1964," American Political Science Review LXV (1971), 131-143; and Herbert F. Weisberg and Jerrold G. Rusk, "Dimensions of Candidate Evaluation," American Political Science Review LXIV (1970), 1167-1185.
19. V. O. Key, Jr., Public Opinion and American Democracy (New York: Knopf, 1961), 27.

CHAPTER TWO

THE THEORY OF POLITICAL PARADIGMS

In his modern classic, The Structure of Scientific Revolutions, ✓
Thomas S. Kuhn presented a theory of the history of science that
explained how science has remained continuous while espousing
contradictory belief systems at various times.¹ Kuhn's basic
argument is that there are historical periods of "normal science"
in which a certain belief system, or paradigm, dominates
scientific investigation. Scientists are not value-free, but rather
value-biased toward the principles which comprise the paradigm.
Scientific revolutions occur when a new paradigm arises which
better accounts for phenomena which were considered anomalous
to the preceding paradigm, and which succeeds in attracting an
enduring group of adherents away from competing modes of
scientific activity. When this transformation process, in which
conflict among scientists is likened by Kuhn to conflict in political
revolutions, is completed, the scientific enterprise then returns
to a stable condition of "normal science," although now functioning
under the beliefs and principles that constitute the newly adopted
paradigm.

As an example of paradigm shifts in physical science, Kuhn notes that during the eighteenth century scientific investigation in the field of physics proceeded under the assumption that light was material corpuscles, as described in Newton's Opticks. In the early nineteenth century, however, Young and Fresnel found that consideration of light as transverse wave motion provided more explanatory power in terms of observed physical phenomena, and science adopted the Young-Fresnel optical paradigm over the previous Newtonian conception. In the twentieth century, Einstein, Planck, and others proposed that additional explanatory power could be obtained by rejecting the Young-Fresnel paradigm and considering light as photons, i. e., quantum-mechanical entities with some characteristics of waves and some of particles.² Current physical research and physics textbooks then proceed under the latter assumption. Thus science, in this case physical science, has maintained continuity of development while at various times proceeding under contradictory conceptions of a basic physical phenomenon. While this example discusses only one small field of science, similar transformations are shown by Kuhn to have occurred elsewhere.

While Kuhn's book has been received as a classic work in the history of science, few have considered it as Kuhn described it

in his introduction, i. e. , as an analysis of the intellectual behavior of members of a community. In the postscript to the second edition, Kuhn acknowledges the generalizability of the concept to other fields:

Having opened this postscript by emphasizing the need to study the community structure of science, I shall close by underscoring the need for similar and, above all, for comparative study of the corresponding communities in other fields. How does one elect and how is one elected to membership in a particular community, scientific or not? What is the process and what are the stages of socialization to the group? What does the group collectively see as its goals; what deviations, individual or collective, will it tolerate; and how does it control the impermissible aberration?³

In this chapter, an attempt will be made to extend Kuhn's theory of intellectual behavior to the American political community, and to postulate a theory of political paradigms.

The term "paradigm" is used by Kuhn in two senses. In one sense it is used to describe the content of belief systems shared by members of a community, which Kuhn refers to as the sociological definition of the term. In this usage then, it is a mere synonym for such sociological phrases as "normative consensus," etc. The second meaning that Kuhn ascribes to the term, however, refers to an explicit exemplary past achievement, a single element of the shared belief system, in Kuhn's words:

... one sort of element in that constellation (of beliefs), the concrete puzzle-solutions which, employed as models or examples, can replace explicit rules as a basis for the solution of the remaining puzzles of normal science.⁴

Generalization of the first meaning of paradigms to the political community is readily accomplished, for no community exists without some organizing principle or ideology, and to apply the term "paradigm" to the content of specific organizing principles at a point in time is simply a question of selection of nomenclature.

The second sense of the word, the puzzle-solving exemplary past achievement, requires a more detailed analysis of the dynamics of change within the political community. Clearly political ideologies, unlike scientific paradigms, are rarely, if ever, "discovered." They develop over time, and the transformation of ideological tenets into specific policy proposals for the political community consumes even more time. However, political scientists have demonstrated the existence of single points in history in which sharp and drastic shifts in the conduct of government of the American political community have been effected. The reference, of course, is to the phenomenon of "critical elections," first pointed to by V. O. Key, Jr., in 1955.

Key's original conception of critical elections was thus described:

... a category of elections in which voters are, at least from impressionistic evidence, unusually deeply concerned, in which the extent of electoral involvement is relatively quite high, and in which the decisive results of the voting reveal a sharp alteration of the pre-existing cleavage within the electorate... (which)... seems to persist for several succeeding elections.⁵

These critical elections then share characteristics analagous to paradigm-shifting scientific discoveries. Kuhn's two criteria for occurrence of a paradigm shift are the ability of the contending paradigm to attract an enduring group of adherents away from the previously dominant paradigm, and the capacity of the contending paradigm to propose solutions to as yet unsolved problems facing the community.⁶ Critical elections clearly perform the first function as a sharp and drastic shift in electoral loyalties to the parties occurs which endures for several elections thereafter. Fulfillment of the second condition, however, would require that critical elections were accompanied by ideological conflict, and that the electorate selected a new ideological paradigm that it felt offered more "concrete puzzle-solutions" than the existing ideological framework. The existence of such conflict surrounding critical elections has been suggested by research built upon Key's original thesis. An up-to-date summary of this research was recently provided by Walter Dean Burnham:

To recapitulate, then, eras of critical realignment are marked by short, sharp reorganizations of the mass coalitional bases of the major parties which occur at periodic intervals on the national level; are often preceded by major third party revolts which reveal the incapacity of "politics as usual" to integrate, much less aggregate, emergent political demand; are closely associated with abnormal stress in the socioeconomic system; are marked by ideological polarizations and issue-distances between the major parties which are exceptionally large by normal standards; and have durable consequences as constituent acts which determine the outer boundaries of policy in general, though not necessarily of politics in detail. ⁷

Burnham's indication of the ideological intensity of critical elections tends to support the conclusion that the electorate is responding to an offer of more "concrete puzzle-solutions" to the concomitant "abnormal stress" in the social system. Thus critical elections seem to also fulfill the definition of paradigms in its second sense, i. e., of the "exemplary past achievement" (in this case an achievement of party and candidate rather than of scientists) which "can replace explicit rules as a basis for the solution of the remaining puzzles" of normal politics (rather than science).

The analogy of political paradigms is now complete. To paraphrase the earlier description of scientific paradigms, there are historical periods of "normal politics" in which a certain belief system, or paradigm, dominates political activity. Politicians are not ideology-free, but rather ideology-biased

toward the principles which comprise the paradigm. Political paradigm shifts occur when a new paradigm arises which, in the judgment of the electorate, better accounts for phenomena which were considered anomalous to the preceding paradigm, and which succeeds in attracting an enduring group of adherents (voters) away from competing modes of political activity. When this process, which culminates at a "critical election," is completed, the political community then returns to a stable condition of "normal politics," although now functioning under the beliefs and principles that constitute the newly adopted paradigm.

Application of the theory of political paradigms to American history can reduce the wide theoretical gap between the traditionalist schools of ideological conflict v. ideological consensus discussed in Chapter One. Each of the competing traditionalist schools can be said to have identified a separate aspect of the process of paradigm formulation. The consensus theorists note the two-century continuity of the community, while the conflict theorists point to several shifts in the content of political paradigms throughout that period of community continuity. Within the theory of political paradigms, the seemingly contradictory conclusions of the two schools reduce to a difference in emphasis, for the theory holds that the community can effect a shift in paradigm content without a loss of continuity. And, while paradigm shifts point to ideological conflict, the theory

does not preclude the existence of a long-run common ideological thread within the paradigm, such as a commitment to the intrinsic freedom of man (similar to the long-run commitment of the scientific community to the principle of objective verification). Commitment to individual freedom, however, could prescribe one set of policies under one paradigm, and a seemingly contradictory set under another. Thus while both Herbert Hoover and Richard Nixon have proclaimed themselves advocates of free economic competition, Nixon's proposed national health program would look scandalously socialistic to Hoover, while currently branded conservative by Senator Edward Kennedy. The point here is that Nixon is the economic conservative within the current paradigm, or "rules of the game," and that intra-paradigm conflict must be distinguished from paradigm-shifting conflict. Intra-paradigm conflict revolves around interpretation of how paradigm content is to be translated into public policy, and not around the content of the paradigm itself. It is this characteristic that distinguishes periods of "normal politics" from periods of paradigm shifts, and this is a point that has been obscured in the arguments of the traditionalist scholars of the conflict and consensus schools.

Further analysis of political paradigms can likewise account for some of the seemingly contradictory findings of the environmental

determinist and rational action schools of voting behavior. This integration requires a brief discussion of the process of paradigm transmittal between generations in a community.

In the scientific community, the dominant scientific paradigm is generally transmitted through formal educational processes, with the paradigms explicitly stated in scientific textbooks. Scientists thus acquire knowledge of the fundamentals of the paradigm at an early stage of their development process. Paradigm transmittal is conducted implicitly as well as explicitly, and Kuhn points out that:

(Scientists can) agree in their identification of a paradigm without agreeing on, or even attempting to produce, a full interpretation or rationalization of it.⁸

Thus scientists can identify with and be guided in their activity by a paradigm without full and complete knowledge of the abstract characteristics and full implications of the specific content of the paradigm itself.

This process of transmittal of scientific paradigms bears a remarkable resemblance to the process of "early politicization" described in The American Voter, through which the young citizen learns to identify with a political party. One significant difference is that political education has historically been excluded from formal

educational processes, and this can perhaps account for the importance of the family in transmitting the paradigm (institutionalized in the political party) to the next generation, as documented in The American Voter.

Likewise, the failure of many voters to have explicit views on all political issues and party positions is similar to the behavior of scientists like those cited in the passage from Kuhn immediately above who accept and identify with the paradigm without complete comprehension of all of its ramifications. Within periods of paradigm dominance, one might expect a large proportion of voters (and scientists) to fall into this category. Thus within the theory of political paradigms, the seemingly nonideological voter is no less rational in his behavior than the scientist.

The theory of political paradigms can then account for the identification of both conscious and subconscious aspects of the voting decision by competing behavioral schools of voting behavior. The existence of the phenomena of party identification and father identification is explained by the fact that the function of paradigm transmittal has been closely tied to the family unit in American society. This can also explain to some extent the predictive ability of socioeconomic class, religion and place of

residence in the Lazarsfeld studies since these are family-related characteristics and the impact of social mobility may have been obscured by the fact that the Lazarsfeld analyses were not based on national samples but on the populations of relatively small and homogeneous sub-components of the entire political community. The existence of issue-oriented behavior pointed to by the analyses of the rational action school demonstrates that the voting decision reflects more than subconscious, rote loyalty to the party that effected the paradigm shift, as well as the ability of the party associated with the previously dominant paradigm to adapt to "normal" competition within the currently dominant paradigm, per the behavior of President Nixon described earlier.

Thus the theory of political paradigms can also account for the seemingly contradictory conclusions of the environmental determinist and rational action schools of voting behavior, as the theory would hold that both conscious and subconscious elements would be expected to be evident in the individual decision. The cyclical characteristics of ideological attention on the part of the bulk of the community were identified as long ago as the time of Edmund Burke, who noted:

The bulk of mankind on their part are not excessively curious concerning any (political) theories, whilst they are really happy; and

one sure symptom of an ill-conducted state is the propensity of the people to resort to them.⁹

Hence within periods of "normal politics" one would expect environmental factors to be more important in influencing voting decisions, while within paradigm-shifting periods, issue orientations would be expected to dominate.¹⁰

The role of the parties in institutionalizing paradigms is a question that requires further exploration, for American political parties in particular have been noted for their lack of ideological consistency. The theory of political paradigms does not require the ideological consistency of the parties, merely that at certain critical periods of paradigm shifts the parties present a choice of ideological paradigms, or "concrete puzzle-solutions," to the electorate. Within periods of paradigm dominance, both parties would be expected to exploit the existence of the paradigm. Indeed, failure to do so can result in near disastrous consequences for the party, as the 1964 election clearly demonstrated. The question of whether or not parties have fulfilled the periodic institutionalizations of paradigms required by the theory will be empirically analyzed in a later chapter, although Burnham's description of the unusual ideological conflict and issue-distances accompanying critical elections lends support to the assignment of parties to this role.

In this chapter, Kuhn's theory of scientific paradigms has been extended to attempt to account for the historical behavior of the members of the American political community, and a theory of political paradigms has been stated. The proposed theory has been shown capable of accommodating and integrating many of the seemingly contradictory conclusions of the theories of American history and politics discussed in the first chapter. In the following chapter, a design for the empirical analysis of political paradigms will be proposed.

NOTES

1. Thomas S. Kuhn, The Structure of Scientific Revolutions (Chicago: U. of Chicago Press, 1962).
2. For a more complete discussion of the shifts in the physical paradigms discussed see Kuhn, op. cit., 11-13.
3. Kuhn, op. cit., 209.
4. Ibid., 175.
5. V. O. Key, Jr., "A Theory of Critical Elections," Journal of Politics XVII (1955), 4.
6. Kuhn, op. cit., 10.
7. Walter Dean Burnham, Critical Elections and the Mainsprings of American Politics (New York: Norton, 1970), 10.
8. Kuhn, op. cit., 44.
9. Edmund Burke, quoted in Boorstin, op. cit., 3, without further citation.
10. While this statement is a logical deduction both from the theory and from impressionistic observations of human behavior (such as Burke's), it cannot be substantiated from survey research works of the kind described in Chapter One, for no survey data exist for any of the elections classified by political analysts as critical. This point will be made explicit in Chapter Six.

CHAPTER THREE

A DESIGN FOR EMPIRICAL ANALYSIS OF POLITICAL PARADIGMS

There is no straightforward empirical test for determining the validity of the theory of political paradigms. Kuhn suggested that shifts in scientific paradigms could be observed by conducting a content analysis of footnote references in scholarly scientific publications and scientific textbooks to "basic" works. His hypothesis is that a paradigm shift would be observable in a concomitant shift in the "basic" works cited most often. The content of the "new" paradigm could then be determined by an analysis of the works cited in the period immediately following the shift.

Unfortunately, a test such as Kuhn proposes is not applicable to political paradigm analysis, as only a very small proportion of the political community publish their ideological views, and these members can be written off as "small groups of dissenters and alienated intellectuals," per Hofstadter's earlier citation.

A more representative sample of the political community can be obtained by analyzing the American presidential electorate. Lester Milbraith provides twenty-eight citations from the literature of social science to document the statement that:

...persons near the center of society are more likely to participate in politics than persons near the periphery.¹

While this obviously points out a bias in considering the electorate as a representative sample of the entire political community, the bias is shown to be toward the "mainstream" of the community, and away from the alienated fringes, hence avoiding Hofstadter's criticism.

As noted earlier, empirical analysis of the phenomenon of critical elections has been underway for at least the last two decades. Since critical elections were held to be the "exemplary past achievements" that consummated the transformation in political paradigms, an empirical analysis of this type of elections and of their social, economic, and political concomitants can provide a means of examining empirical support for hypotheses derived from the theory of political paradigms. A design for such analyses then requires the proposal of empirical techniques to identify critical elections and to identify their social, economic, and political concomitants.

Identification of Critical Elections

Methods for identifying critical elections have generally been of two generic types: the formation of deductive typologies, based upon a priori selection of the differentiating characteristics of

such elections; and the identification of shifts in electoral realignments through inductive analysis of historical voting data.

The first type of analysis described follows up on Key's original suggestion that a satisfactory theory of historical electoral behavior would require the development of a holistic typology of elections so that the differentiating characteristics of critical elections could be clearly distinguished from characteristics of the more numerous electoral outcomes that characterize periods of normal conflict. In The American Voter, Angus Campbell and his associates contributed to the development of such a typology by defining two additional types of elections: maintaining and deviating. As Figure 1 shows, Gerald Pomper later pointed out that the Campbell group's trichotomous typology was actually two-dimensional in scope, and he then identified a fourth election type, converting, by filling in the empty cell in their property space.

Figure 1

A Classification of Presidential Elections²

		<u>Majority Party</u>	
		<u>Victory</u>	<u>Defeat</u>
<u>Electoral Cleavage</u>	<u>Continuity</u>	Maintaining	Deviating
	<u>Change</u>	Converting	Realigning (Critical)

The complete Pomper typology then depends upon two criteria for distinguishing critical elections, the amount of change from the electoral cleavage of the previous election and the outcome of the election for the incumbent party. The typology does distinguish between converting and realigning (or critical) elections, a distinction that supports the suggestion made earlier that intra-paradigm conflict must be distinguishable from paradigm-shifting conflict, although it does so on the sole basis of whether or not the incumbent party has been returned to the presidency or turned out.

While the Pomper typology of elections appears to fulfill the need for a holistic analysis of electoral alignments as originally suggested by Key, its primary reliance on subjective definition of the distinguishing characteristics of elections and its assumption of the two-dimensional nature of historical electoral conflict are subject to question. Hugh Douglas Price, in an examination of the methodological problems of arbitrarily selecting criteria for the definition of electoral trends, pointed out that often:

In gross outline the trend of historical data is clear. But the inferences to be drawn from it are not so clear, and depend substantially upon one's assumptions and criteria.³

Hence the element of arbitrariness in Pomper's selection of two criteria for differentiating elections may introduce a bias into

the typology or, more likely, obscure some additional differentiating characteristics that would be deduced from other potential criteria. The spatial conception of electoral alignments in two dimensions may also be an arbitrary restriction that obscures differentiating phenomena. Recent research by Ronald E. Weber on state party systems indicates that four dimensions of party competition are identifiable at the state party level, and this finding certainly casts doubt on the adequacy of a two-dimensional spatial conception of electoral competition at the national level.⁴ The Pomper typology, then, must be regarded as a less than definitive source for the identification of critical elections.

The second type of approach to identifying critical realignments of the electorate referred to inductive analysis of historical voting data. This approach was taken by Walter Dean Burnham in his recent monograph, Critical Elections and the Mainsprings of American Politics. In essence, Burnham forsook the holistic, but subjective, approach to construction of typologies in favor of employing inductive statistical techniques to identify "cutting points" of transition from one system of electoral politics to the next. He argued that attention should be focused on any rapid and compressed realignment of the electorate, and criticized distinctions between converting and critical realignments as "superfluous typologies"

which serve to "make analysis perhaps more complex than is necessary."

Burnham employed two types of statistical tests to the historical Democratic percentage of the two-party vote. The first, the Ezekiel-Fox discontinuity test, is a variant of linear regression analysis.⁵ As employed by Burnham, sequences of ten presidential elections were taken at a time. The elections were identified in the regression analysis by dummy variables, the first five elections being assigned a value of zero, the last five a value of one. The regression was then performed on the Democratic percentage of the vote. In this analysis then the first five elections are considered one period and the second five another. Ezekiel and Fox then argue that "A significant net regression coefficient implies a significant change in the relationship from one period to the other."⁶ Burnham applied this procedure to all possible sets of ten contiguous elections and identified four periods of critical realignment.⁷

The second test employed by Burnham was a simple student's t difference of means test. Again considering sequences of ten elections, Burnham argued that a statistically significant difference of means between the two five-election sub-groups

indicated a significant change in the alignment of the electorate. The results of this analysis tended to confirm the findings of the discontinuity tests, and the same four critical periods were identified.⁸

While the techniques employed by Burnham are appealing on the basis of their lack of subjectivity, they too are not without undesirable characteristics. In the first place, the analysis requires the existence of ten contiguous elections in which the popular vote was taken. Using Burnham's convention of identifying midpoint years of these sequences as the "cutting points," this means that the earliest period that can be tested has a midpoint of 1846, and the latest, a midpoint of 1950. In addition, Burnham's focus on periods, rather than specific elections, somewhat obscures the precise identification of a single election as critical. While earlier research by Duncan MacRae and James A. Meldrun pointed to the existence of critical periods preceding critical elections, and thus lends some support to Burnham's period analysis approach, both Key's original theory and the theory of political paradigms require that one election can be identified at which the paradigm shift is effected. Thus Burnham's approach is not directly applicable to a test of political paradigms. And finally, in forsaking the holistic approach, Burnham leaves unanswered the question of precisely

what electoral characteristics distinguish paradigm-shifting elections from normal politics.

Thus neither of the methods previously used to identify critical elections appears definitive enough to employ in a test of the theory of political paradigms. In the following section, a new method will be proposed which incorporates desirable elements of both the holistic and inductive approaches discussed above, while minimizing the effect of their undesirable characteristics.

Inductive Definition of Election Types

The method chosen to identify critical elections involves the use of multivariate techniques of statistical analysis to develop an inductive typology of presidential elections. These techniques will allow a relatively large number of differentiating characteristics to be employed, and they will permit an n-dimensional spatial conception of the construct of electoral alignment. In addition, the inductive nature of these techniques diminishes reliance on subjective choice of distinguishing criteria. The specific multivariate techniques to be employed are those of alpha factor analysis to estimate differentiating dimensions of elections, and hierarchical cluster analysis to group the elections into natural clusters or types based upon the differentiating dimensions identified. The typology developed in this manner will therefore share the holistic

quality of the Pomper typology and the inductive objectivity of the Burnham analyses. The characteristics of the techniques employed are discussed below.

Factor Analysis

Before justifying the employment of alpha factor analysis, the underlying mathematical principles of factor analysis will be examined.⁹ Factor analysis is an applied form of what mathematicians refer to as the "characteristic value" problem. This problem is one of describing the numerical relationships among large sets of numbers, in matrix form, in a more concise manner than the original matrix itself. A brief discussion of this problem, and of its mathematical resolution, follows.

Consider a square matrix of numbers, A , where:

$$A = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{n1} & a_{n2} & \cdots & a_{nn} \end{bmatrix}$$

The characteristic value problem is that of finding n scalar parameters, λ , (single numbers), which satisfy the equality

$$A\underline{x} = \lambda \underline{x},$$

where \underline{x} are identical n-element vectors. If such scalars can be determined they could then be said to be "equivalent" to the original matrix A. One obvious solution is $\underline{x} = \underline{0}$, but this is dismissed as trivial since the λ s could then take on any value. The restraint $\underline{x} \neq 0$ is then placed upon the solution, and the above equality is rewritten

$$A\underline{x} = \lambda I\underline{x},$$

where I is simply an identity matrix. By simple algebraic manipulation this can be rewritten

$$(A - \lambda I) \underline{x} = 0.$$

Since it has already been determined that if $\underline{x} = 0$ the solution would be trivial, then a nontrivial solution exists if and only if

$$|A - \lambda I| = 0, \quad 10$$

which is generally referred to as the "characteristic equation" of the original matrix, A.

Algebraic theory has determined that the characteristic equation of an n-by-n element matrix has n roots, or values of λ . These roots, λ , are variously referred to as the characteristic roots, latent roots, or eigenvalues of the original matrix of observations. Hence by solution of the characteristic value problem, the numerical relationships contained in the original

n-by-n matrix can be represented in abbreviated form by the n scalars (single numbers), λ . Each λ also has an associated vector \underline{x} , generally referred to as its eigenvector, which enables it to fulfill the originally stated equality

$$A \underline{x} = \lambda \underline{x}.$$

In the statistical technique of factor analysis, the matrix that is solved for its characteristic roots is a correlation matrix. Two generic types of factor analysis have been developed: principal components analysis and factor analysis proper. In principal components analysis the correlation matrix is unaltered and merely subjected to a characteristic value solution. It can be shown statistically that the sum of the characteristic values of a correlation matrix equals the total variance of the matrix, which is in turn given by the sum of the elements down the diagonal of the matrix.¹¹ Since characteristic roots generally differ widely in numerical magnitude, the value of each root is often used to determine how much of the original variance is associated with the eigenvector of that characteristic root. Quite often almost the entire amount of variance in the correlation matrix is associated with a much smaller number of eigenvectors, and hence principal components analysis is often employed as a data reduction technique, with the smaller number of eigenvectors used to replace the larger

number of original variables contained in the correlation matrix.¹²

Factor analysis proper, like principal components analysis, also has the property of data reducibility. However in factor analysis proper the object is to separate (or "factor") the original variance in the correlation matrix into two parts: variance that is "shared" by the variables in the matrix and variance that is "unique" to any single variable. This is accomplished by altering the correlation matrix prior to extracting the characteristic roots. The alteration generally involves substituting the squared multiple correlations of each variable with the others into the diagonal elements of the matrix, i. e., in place of the "perfect" 1.00 correlations of each variable with itself. The sum of these squared multiple correlations, now the diagonal elements, is then used as an estimate of the "shared" or "common" variance of the original correlation matrix.¹³ The matrix altered by insertion of the squared multiple correlations is referred to as the "reduced correlation matrix," and in factor analysis proper this is the matrix that is subjected to a characteristic value solution.

Once the characteristic roots and eigenvectors of a correlation, or reduced correlation matrix are determined, the eigenvectors are usually subjected to additional linear transformations in order to

improve the interpretability of the phenomena which they describe.

A standard transformation is to calculate "factor loadings" for each eigenvector. This is accomplished by multiplying each element of the eigenvector by the square root of its associated eigenvalue. The factor loading estimated by this computation is then interpreted as the correlation coefficient, or "loading," of each original variable with each eigenvector, or "factor." ¹⁴

A matrix of factor loadings then displays the correlational relationships between the original variables and the reduced number of factors, hence facilitating the interpretation of the phenomena described in the factors.

The pattern of correlational relationships displayed in any single factor loading matrix is not unique, however, and by subjecting the factor loading matrix to additional linear transformations an infinite number of factor loading matrices can be developed from the original characteristic vectors and eigenvectors. The purpose of these transformations is generally to relocate the axes of the factors in n-dimensional space in order to maximize some previously determined criterion of interpretability. Hence the analyst must pre-determine a criterion for determining which factor loading matrix to employ as the most appropriate description of the original variables for the purposes of his analysis. A

discussion of the resolution of this problem will be taken up in the following section.

To summarize the basic characteristics of factor analysis, then, it has been shown capable of examining the numerical relationships of a relatively large number of original variables, of distinguishing the common or shared relationships among these variables (if desired), and of representing these relationships in a smaller number of eigenvectors or factors. By application of linear transformations to the eigenvectors, the phenomena described in these reduced number of factors can be subjected to theoretical interpretation. These are the basic characteristics of any factor analysis. In recent years, however, additional capabilities have been developed for specific factor analysis applications, and a discussion of the factor analysis model to be employed in this study follows.

Alpha Factor Analysis

In discussion above, the problem of selecting the "most appropriate" factor loading matrix to represent the original variables was left unsolved. The most common solution to this problem is to "rotate" the factor loading matrix through the space containing the infinite number of solutions until one fulfilling a set of criteria designated as "simple structure" has been found.¹⁵

The criteria for determining "simple structure" have been arbitrarily defined by L. L. Thurstone thus:

1. Each row of the matrix should contain at least one zero.
2. Each column of the matrix should contain at least as many zeroes as there are factors.
3. Every pair of columns should contain several variables whose loadings vanish in one column but not in the other.
4. If there are four or more factors, every pair of columns should contain a large number of variables with zero loadings in both columns.
5. Conversely, for every pair of columns only a small number of variables should have nonzero loadings in both columns.¹⁶

While these criteria are undoubtedly the most popular in contemporary factor analysis applications, other decision criteria have been developed. The criterion employed in this study is to select the factor loading matrix that maximizes Cronbach's coefficient of generalizability. This attempt to introduce elements of statistical inference into a factor analytic solution was developed by Henry F. Kaiser and John Caffrey and termed "alpha factor analysis" after the coefficient employed.¹⁷

Broadly stated, the goal of alpha factor analysis is to generalize from some (usually nonrandom) sample of variables that purport to measure a phenomenological construct to the universe of content of that construct, based upon information contained in a population of cases. Note that this goal is quite different from the usual concept of statistical inference, which is to generalize to some

population of individuals from a sample of cases on certain specific variables. To distinguish these types of inference, the type employed in alpha factor analysis is sometimes referred to as "psychometric inference," after the journal, Psychometrika, in which the techniques of this type of inference were generally first published.

The rationale behind the concept of psychometric inference has slowly developed over a half century. Its initial roots lie in the original concepts of reliability theory which attempted to determine the confidence that psychologists could have in the reliability of tests developed to measure some specific non-physical phenomena. In the classical period of reliability theory, which traces back at least to Charles Spearman in 1904,¹⁸ reliability was defined as the correlation between "equivalent" measures of a phenomenon. These coefficients were generally calculated by dividing test responses into halves, and calculating the correlation, or "split-half" coefficient. High coefficients were then taken to indicate that the test provided a relatively "true" measure of the phenomenon. Many criticisms of the split-half approach were formulated, the most telling of which being the arbitrary nature in which the test scores were generally divided in half.

In 1951, Lee J. Cronbach derived his "alpha coefficient of reliability" which was shown to be the mean of all possible

split-half coefficients resulting from different splittings of a test, and he concluded:

(The alpha coefficient) is therefore an estimate of the correlation between random samples of items from a universe of items like those in the test. ¹⁹

In a landmark article that literally revolutionized the field of reliability theory, Robert C. Tryon pointed out that reliability coefficients like Cronbach's alpha had greater conceptual validity than the generally narrow theorems of reliability theory, which had not been revised since Spearman. Tryon developed the broader concept of "behavior domain validity," and argued:

A statistic that is more meaningful than the reliability coefficient is the correlation of X_t (observed variables) with a score on the domain of components comparable to X_t . A domain score of an individual would be the best criterion of his status in the property X, as operationally defined. ²⁰

He then derived the "behavior domain validity coefficient" of a variable which estimates how close observed scores on a variable are to "their ranking in a perfectly reliable measure of the property X, as operationally defined." The behavior domain validity coefficient, r_{ttw} , was shown to be simply the square root of the reliability coefficient, and was defined as:

The correlation between a sample (measure) and its perfect criterion measure of the property X, as operationally defined. ²¹

Hence to test the domain validity of a measurement device, the coefficient r_{tuo} is calculated, and if it is too low it is concluded that the device selected to operationalize the phenomenon under investigation must be improved.

In 1963, Cronbach and his associates further extended Tryon's concept of behavior domain validity to a more formal theory of generalizability,²² and it was upon this development that Kaiser and Caffrey developed the application of the renamed "alpha coefficient of generalizability" to the factor analysis model.

The basis of alpha factor analysis has been clearly stated by Kaiser and Caffrey:

The principle upon which the present method of factor analysis is based is that common factors, x_s , are to be determined which have maximum correlation with corresponding universe common factors y_s . This compelling psychometric concept of assessing the confidence one may have in a variable, here a common factor, by determining the correlation of its representation for the variables to be observed with its "true" representation for all variables in the universe is due to Tryon, as his notion of "behavior domain, i. e., universe, validity."²³

Hence alpha factor analysis, in addition to sharing the properties of data reducibility and determination of shared relationships, incorporates the property of selection of a factor loading matrix that is most generalizable to the universe of content of the phenomenological construct under investigation by maximizing Cronbach's alpha and concurrently Tryon's behavior domain validity coefficient.

Alpha factor analysis then appears ideally suited to an examination of the differentiating dimensions of a population of presidential elections. In this analysis, the required population of cases is defined as the presidential elections within the "modern party system."²⁴ (It should be noted at this point that the decision to limit the analysis to the modern party system was based upon the need for concomitant social, economic, and political data for later analyses, and practically no consistent time series of such data can be developed to include the period prior to 1860.) The nonrandom sample of variables comprises twenty-eight measures of the distribution of the electorate in each election, which will be discussed in Chapter Four. And the phenomenological construct to be generalized to is of course the historical alignment of the electorate in presidential elections. The alpha factors extracted in this analysis will then provide the "best" available approximations of the "true" differentiating dimensions of electoral alignment that can be inductively derived from the data.

Hierarchical Cluster Analysis

The identification of differentiating dimensions of electoral alignments is only the first step in the construction of the inductive typology of elections. The second step will consist of the actual

formation of the election groups or types based upon an analysis of the factor scores of the individual elections on each of the differentiating elections identified.²⁵

The technique employed in the development of election types is hierarchical cluster analysis. This technique, based on an algorithm proposed by Joe H. Ward, Jr.,²⁶ initially considers each election as a separate group. Then, in a stepwise fashion, elections are grouped on the basis of their factor scores until all elections are placed in a single group. The grouping criterion employed is to join those elections, or groups of elections, whose union will result in the smallest increase in within group heterogeneity (variance). The groups thus formed at each step will be the most homogeneous groupings possible. The groups formed at each step of the process are defined by the algorithm, and a decision must be made as to the number of groups to be employed in the typology. The criterion for selecting the number of groups to be employed in this study was the widely used procedure suggested by Ward, i. e., to select the smallest number of groups formed just prior to a sharp loss in within group homogeneity (a sharp increase in within group variance). The rationale behind this criterion is that the drop in homogeneity indicates a "natural" cutoff point in terms of selecting the number

of groups to be included in a typology as it indicates that a greater than normal loss of group individuality would occur by breaking off an additional group.

The application of the alpha factor analysis and hierarchical clustering techniques to historical election data then provides an inductive methodology for development of a holistic typology of elections. This then concludes description of the first stage of the proposed empirical analysis of the theory of political paradigms. In the next section, a method for determining the social, economic, and political concomitants of the election types to be developed will be discussed.

Societal Concomitants of Election Types

As noted earlier, examination of empirical support for hypotheses derived from the theory of political paradigms requires the identification of social, economic, and political concomitants of the election types. This method selected for identifying such phenomena is a stepwise multiple discriminant analysis of election types, based not upon the factor scores from which they were originally grouped, but rather upon fifty-four measures of societal change (discussed in Chapter Five). The rationale underlying this method follows.

Discriminant function analysis is a statistical technique originally developed to classify an individual with known characteristics into one of several groups, the characteristics of whose members are also known. The technique is actually a variant of Hotelling's T^2 multivariate difference of means test, and was adapted by R. A. Fisher as a classificatory measure.²⁷ Later, the technique was further adapted to a stepwise computational format in order that the characteristics that discriminated the groups could be determined in their relative order of importance. Several criteria for entering variables into the stepwise function have been developed, and the one employed in this study is to enter the variable which when partialled on previously entered variables, if any, has the highest multiple correlation with the groups.²⁸ Selection of this criterion controls for the effect of intercolinearity among the original fifty-four variables included in the analysis.

As noted above, the original characteristics on which the electoral types were formed are not included in the discriminant analysis. The groupings of elections are then a priori to any consideration of the variables in the analysis. The discriminant analysis based on the fifty-four measures of societal change will then identify which societal change variables best discriminate

the election types, which leads to an interpretation of the specific phenomena concomitant to electoral outcomes.

Two forms of interpretation are involved. The first is an interpretation of the discriminant function coefficients of the variables found to discriminate the types. This enables an interpretation of what social phenomenon best discriminates election outcomes. The second interpretation involves the computation of discriminant scores for the individual elections in order to determine the relationships of the election types to the discriminating phenomenon.

The application of the multiple discriminant analysis will then complete the empirical analyses of the distribution of the electorate in presidential elections, and of social, economic, and political phenomena that are concomitant to types of electoral distributions. The final section in this chapter will discuss relationships, based upon the theory of political paradigms discussed in Chapter Two, that would be expected to be discerned in these analysis.

Hypotheses on Political Paradigms

This discussion of a research design for the empirical analysis of political paradigms will conclude with the statement of five hypotheses derived from the discussion in Chapter Two which, if supported by the empirical analyses discussed in this chapter, would lend support to the validity of the theory of political paradigms:

Hypothesis #1: Paradigm-shifting elections should be distinguishable from "normal" party competition by formation of an electoral typology from an inductive examination of the historical distributions of the electorate.

Hypothesis #2: Paradigm-shifting elections should coincide with some societal crisis to inspire the attentiveness of the electorate.

Hypothesis #3: The victorious party in paradigm-shifting elections should have proposed a "new" ideological paradigm, ideologically opposed to the previous paradigm.

Hypothesis #4: Periods following paradigm shifts should be marked by a return to "normal" party competition.

Hypothesis #5: Periods prior to paradigm shifts should show some distortion of "normal" party competition as anomalies to which the dominant paradigm cannot respond become aware to the electorate.

In the following two chapters, the results of the inductive analyses proposed in this chapter will be discussed. Chapter Four will describe the development of the inductive typology of elections, and Chapter Five will discuss the concomitants of the election types.

The final chapter will then consider the amount of support evident in the empirical analyses for the hypotheses stated above, and will attempt a general assessment of the validity of the theory of political paradigms.

NOTES

1. Lester Milbraith, Political Participation (Chicago: Rand McNally, 1965), 113-114.
2. Gerald M. Pomper, Elections in America (New York: Dodd, Mead, 1968), 104. For a more detailed discussion of his classification scheme, see his article, "Classification of Presidential Elections," Journal of Politics, 29 (1967), 535-566.
3. Hugh Douglas Price, "Micro- and Macro-Politics: Notes on Research Strategy," in Oliver Garceau, ed., Political Research and Political Theory (Cambridge: Harvard U. Press), 1968, 119.
4. Ronald E. Weber, "Dimensions of State Party Systems," presented at the 1969 Annual Meeting of the Northeastern Political Science Association, Hartford, Connecticut.
5. Mordecai Ezekiel and Karl A. Fox, Methods of Correlation and Regression Analysis (New York: Wiley, Third Edition, 1959), 343-344.
6. Ibid., 344.
7. Burnham, op. cit., 13-18.
8. Ibid., 16.
9. The discussion of factor analysis that follows is intended to be as untechnical as possible, while still thorough in its coverage. For a still less technical description of the technique See Norman H. Nie, Dale H. Bent, and C. Hadlai Hull, SPSS: Statistical Package for the Social Sciences (New York, McGraw-Hill, 1970), 208-226. For a still more detailed, but highly technical discussion, see Donald F. Morrison, Multivariate Statistical Methods (New York: McGraw-Hill, 1967), 221-293.
10. The term included in the slashes, / . . . /, is intended to mean "the determinant of," rather than "the absolute value of."
11. For proof of this statement see Morrison, op. cit., 222-229.

12. This should not imply that data reduction is the only application of principal components analysis. In a general sense it can be used to test hypotheses about the dependence structure of multivariate observations. In the paper by Weber, op. cit., principal components analysis was used to test the hypothesis that the construct of party competition at the state level was composed of only a single dimension. A principal components analysis of a large number of variables that purported to measure state party competition identified four eigenvectors that were associated with large enough amounts of the original variance that Weber concluded that they measured separate dimensions of the construct.

13. While early factor analysis programs considered the sum of the squared multiple correlations as an adequate estimate of shared variance (see "BMDO3M: General Factor Analysis," in W. J. Dixon, ed., BMD: Biomedical Computer Programs (Berkeley; U. of California Press, 1967), more recent programs incorporate iterative procedures to estimate variable "communalities," which are then summed and employed as an estimate of shared variance (see "BMDX72: Factor Analysis," in W. J. Dixon, ed., BMD: Biomedical Computer Programs X-series Supplement (Berkeley: U. of California Press, 1970, and Nie, Bent, and Hull, op. cit.). Additional methods of communality estimation are discussed in these references.

14. The validity of this statement is demonstrated in Morrison, op. cit., 226.

15. While the word "rotate" was employed to maintain the heuristic geometrical analogy, selection of simple structure matrices is generally determined by one of several alternative mathematical solutions which are discussed in Nie, Bent and Hull, op. cit.

16. Morrison, op. cit., 278-279.

17. Henry F. Kaiser and John Caffrey, "Alpha Factor Analysis," Psychometrika 30 (1965), 1-14.

18. Charles Spearman, "The Proof and Measurement of Association Between Two Things," American Journal of Psychology XV (1904), 72-101.

19. Lee J. Cronbach, "Coefficient Alpha and the Internal Structure of Tests," Psychometrika, 16 (1951), 297.
20. Robert C. Tryon, "Reliability and Behavior Domain Validity: Reformulation and Historical Critique," Psychological Bulletin 54 (1957), 236-237.
21. Ibid., 237.
22. Lee J. Cronbach, Nageswari Rajaratnam, and Goldine C. Gleser, "Theory of Generalizability: A Liberalization of Reliability Theory," The British Journal of Statistical Psychology 16 (1963), 137-163.
23. Kaiser and Caffrey, op. cit., 5.
24. Research supporting the dating of the modern party system from circa 1860 to the present can be found in such sources as Richard P. McCormick, "Political Development and the Second Party System," and Walter Dean Burnham, "Party Systems and the Political Process," both in William N. Chambers and Walter Dean Burnham, ed., The American Party Systems (New York, Oxford, University Press, 1967).
25. The alpha factor analysis conducted in this analysis utilized the computer program described in Nie, Bent, and Hull, op. cit. Unfortunately, the SPSS factor analysis program permits the computation of factor scores only from factor matrices rotated to simple structure. In order to generate factor scores for each election from the alpha factors, an original computer program was written in MATLAN, employing the procedure specified by M. S. Bartlett for estimation of factor scores (see Morrison, op. cit., 293). The factor score program in the MATLAN language is given in Appendix I of this dissertation.
26. Joe H. Ward, Jr., "Hierarchical Grouping to Optimize an Objective Function," American Statistical Association Journal 58 (1963), 236-244. The computer program used to employ Ward's algorithm was written by Phillip Bell and Stephen Gladin, graduate students in the Departments of Industrial and Systems Engineering, and Geography, respectively, at the University of Florida.
27. For a discussion of this adaptation see Morrison, op. cit., 130-132.

28. The multiple discriminant program employed was "BMDO7M: Stepwise Discriminant Analysis," in Dixon, ed., op. cit. (1967). A description of other criteria available for entering variables into the discriminant function is included in that reference.

CHAPTER FOUR

AN INDUCTIVE TYPOLOGY OF ELECTIONS

In this chapter, the methods described in the previous chapter will be employed to construct an inductive typology of presidential elections for the period 1860-1968. As noted earlier, Pomper employed two differentiating characteristics in his typology, the amount of change in electoral cleavage from the previous election and the outcome of the election for the incumbent party. Burnham's inductive analysis employed only the Democratic percentage of the vote. In this analysis, twenty-seven separate differentiating characteristics of elections, shown in Table 1, will be employed. These characteristics and the rationale behind their inclusion in the analysis are discussed below.

Both Pomper and Burnham agreed that change in party support is an important differentiating characteristic of elections. But there are two ways of measuring such change. One way is to compare levels of support for a party, as Burnham did. Another is to measure the change from the previous election in the amount of support received by the party, as attempted by Pomper. The

TABLE 1
DIFFERENTIATING CHARACTERISTICS OF ELECTIONS^a

1. Percent of Vote for Winning Party
2. Change in Percent of Vote for Winning Party
3. Percent of Vote for Runnerup Party
4. Change in Percent of Vote for Runnerup Party
5. Percent of Vote for All Third Parties
6. Change in Percent of Vote for All Third Parties
7. Number of Parties Receiving at Least One Percent of Vote
8. Change in Number of Parties Receiving at Least One Percent of Vote
9. National Margin of Victory
10. Incumbent Party Turnover or Reelection

^aSources of data for these characteristics were the following: For elections in the period 1860-1960, Svend Petersen, A Statistical History of the American Presidential Elections (New York: Ungar, 1963); and for the elections of 1964 and 1968, Richard C. Scammon, comp., America Votes 8, Washington: Governmental Affairs Institute, 1968).

TABLE 1 (Continued)

11. Number of Immediately Preceding Elections Won by Winning Party
12. Number of Immediately Following Elections Won by Winning Party
13. Number of Preceding Five Elections Won by Winning Party
14. Number of Following Five Elections Won by Winning Party
15. Percent Change in Aggregate Turnout
16. Percent of States Carried by Winning Party
17. Change in Percent of States Carried by Winning Party
18. Percent of States Switching Party Allegiance
19. State Voting Shift Distribution: Mean
20. State Voting Shift Distribution: Standard Deviation
21. State Voting Shift Distribution: Skewness
22. State Margin of Victory Distribution: Mean
23. State Margin of Victory Distribution: Standard Deviation

TABLE 1 (Continued)

- 24. State Margin of Victory Distribution: Skewness
- 25. Percent of Electoral College Vote for Winning Party
- 26. Percent of Electoral College Vote for Runnerup Party
- 27. Percent of Electoral College Vote for All Third Parties

distinction is between a comparison of levels of support or of change in levels of support. Both types of measurements are included in this analysis.

The first four variables measure the percentage of support and the percentage change in support for the two major parties, winning and losing. The measurement of support for winning and losing parties, rather than for Republican and Democratic, was employed because the phenomenon under investigation is electoral realignment from a period of party dominance, regardless of the particular party that happens to be dominant at that specific moment, consistent with Pomper's approach. Hence a realigning election would be marked by a sharp increase in vote for the winner and a similar decline for the loser. If the variables instead measured Republican and Democratic percentages of the vote, realignments would be broken down into Republican and Democratic realignments, and that is not the purpose of the analysis.

The fifth and sixth variables measure the level of support and change in level of support for all third parties. These variables are intended to operationalize support for elements espousing issues that are outside the framework of the issues encompassed by the two major parties. The distinction between whether or not this

support was aggregated in a single third party or dispersed among several parties is made in variables seven and eight, which measure the number of parties that received at least 1 percent of the vote and the change in the number of such parties.

The ninth variable measures the closeness of the competition at the national level, which relates to Pomper's notion of change in electoral cleavage, and the tenth measures whether or not the incumbent party was turned out, the other differentiating criterion employed by Pomper.¹ In addition, the eleventh through fourteenth variables go beyond the previous election in measuring the history of success of the winning party as variables eleven and thirteen measure the number of immediately preceding elections won by the winner and the number of elections won in the preceding five elections, respectively, while variables twelve and fourteen measure similar phenomena for following elections.²

Variable fifteen measures the percentage change in aggregate turnout from the preceding election, a phenomenon that Burnham subjected to secondary analysis in support of the results generated by his examination of the Democratic percentage of the vote.³

These first fifteen variables all provide measures of the behavior of the electorate at the aggregate or national level. However, several analysts have pointed to the role of the individual

states in effecting realignments, since presidents are not elected on the basis of the aggregate distribution of the popular vote, but rather by their ability to gain victories in sufficiently populous states in order to win a majority of the electoral college vote.⁴ Hence a comprehensive typology of elections should include some measure of change in voting patterns at the state level. Nine such measures are included in this analysis.

Variable sixteen, an obvious choice, measures the percentage of states carried by the winner, while variable seventeen measures the change in this percentage from the previous election. Variable eighteen measures the percentage of states that switched allegiance from one party to another (and hence their electoral vote).

Variables nineteen through twenty-one are attempts to characterize the amount of deviance in individual states from the mean or average state shift in the vote for the winner. The shift in vote to or away from the winner was calculated for each state in each election. For each election then there existed a distribution of elements measuring voting shifts to or away from the winning party. Variables nineteen through twenty-one measure three characteristics of those distributions for each election. Variable nineteen presents the mean of the distribution, or the average percent shift in state vote. Deviation from this average shift by

individual states is measured by variable twenty, which presents the standard deviation of the distribution. A large standard deviation would indicate that change in support for the winning party varied greatly among the individual states. Finally, variable twenty-one measures whether or not the deviation was skewed in a positive or negative direction away from the mean. Hence these measures provide observations of the mean percentage shift in state vote for the winning party, of the amount of deviation of individual states from that mean or average shift, and the skewed direction of such a deviation, if any was found to exist.

Variables twenty-two through twenty-four measure similar characteristics of distributions of the margin of victory (or defeat) of the nationally victorious party in each state. Variable twenty-two presents the mean state margin of victory (defeat), variable twenty-three measures the standard deviation of the states about the mean, and variable twenty-four measures direction, if any, of skewness about the mean.

The final three variables measure the electoral vote for winning, runnerup, and all third parties, respectively. The electoral vote provides a method of weighting a party's ability to carry individual states by the population of those states. As such, it integrates the operationalizations of aggregate and state distributions of the vote

included above. Since a party's ability to remain in power rests on its ability to carry states large enough to garner a majority of the electoral college vote, a typology of elections should include measures of its success at doing so.

The twenty-seven variables included in this analysis then include more detailed observations of the differentiating phenomena incorporated in the Burnham and Pomper methods, as well as observations of additional phenomena that were held to be relevant to the differentiation of electoral alignments. Measures of these variables for the elections from 1860-1968 were then subjected to an alpha factor analysis as described in Chapter Three.

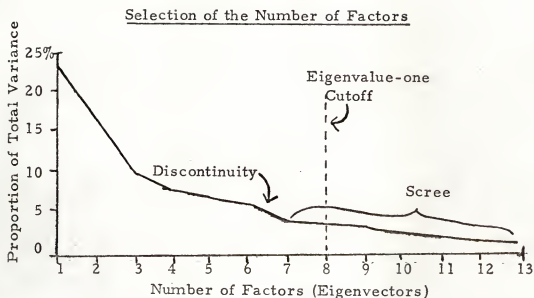
As Table 2 indicates, six alpha factors were extracted from the twenty-seven variables and these six factors contained more than 76 percent of the total variance. The selection of the number of factors to be extracted was made by application of the three criteria recommended for alpha factor analysis applications by R. J. Rummel.⁵ These criteria are shown in Figure 2.

The three criteria suggested by Rummel are the eigenvalue-one, discontinuity, and scree tests. As Figure 2 indicates, the eigenvalue-one cutoff occurs at eight factors, indicating that the number of factors to be extracted lies in this general area. However, a

ALPHA FACTOR LOADINGS

Variables	Factors					Communalities
	I. "Normal" Competition	II. Realignment: Multi-Party	III. Realignment: Two-Party	IV. Deviating	V. Maintaining	
1. Percent of Vote-Winner	.65	.56	.29	.20	.19	.00
2. Change in Percent of Vote-Winner	.62	.21	.51	.22	.09	.79
3. Percent of Vote-Runnerup	.48	.51	.48	.38	.39	.76
4. Change in Percent of Vote-Runnerup	.06	.23	.32	.21	.02	.21
5. Percent of Vote-All Third Parties	.07	.72	.51	.12	.17	.83
6. Change in Percent of Vote-All Third Parties	.21	.49	.22	.40	.20	.62
7. # of Parties (at least 1% of vote)	.28	.42	.23	.02	.34	.45
8. Change in # of Parties	.37	.33	.04	.26	.06	.46
9. National Margin of Victory	.77	.02	.11	.43	.45	.99
10. Turnover (+) or Reelection (-)	.04	.69	.26	.37	.24	.77
11. # Preceding Elections Won	.26	.42	.08	.26	.13	.33
12. # Following Elections Won	.30	.30	.01	.04	.27	.03
13. # Elections Won - Preceding 20 Years	.28	.20	.17	.33	.06	.26
14. # Elections Won - Following 20 Years	.05	.13	.01	.62	.46	.31
15. Percent Change in Aggregate Turnout	.01	.01	.08	.07	.14	.23
16. Winner of States Carried by						.03
17. Change in Percent of States Carried by Winner	.85	.25	.13	.19	.01	.88
18. Percent of States Switching Parties	.51	.04	.07	.12	.01	.31
19. State Voting Shift Distribution - Mean	.01	.22	.30	.01	.11	.19
20. State Voting Shift Distribution - Std. Dev.	.58	.33	.47	.21	.04	.89
21. State Voting Shift Distribution - Skewness	.01	.31	.19	.19	.25	.25
22. State Margin of Victory Distribution - Mean	.35	.16	.39	.40	.04	.48
23. State Margin of Victory Distribution - Std. Dev.	.70	.29	.14	.01	.18	.77
24. State Margin of Victory Distribution - Skewness	.08	.20	.16	.15	.13	.19
25. Percent of Electoral Vote-Winner	.01	.06	.28	.30	.07	.27
26. Percent of Electoral Vote-Runnerup	.89	.25	.17	.20	.08	.97
27. Percent of Electoral Vote-All Third Parties	.86	.05	.19	.28	.17	.94
Alpha Coefficient of Generalizability	.15	.54	.03	.16	.21	.38
Behavior Domain Validity Coefficient	.67	.63	.50	.48	.46	.34
Associated Percent of Common Variance	.82	.79	.71	.69	.68	.58
Associated Percent of Total Variance	22.7	20.4	15.5	14.8	14.5	100.0
	17.5	15.7	11.9	11.4	11.2	76.9

Figure 2



discontinuity in the slope of the curve occurs in going from the sixth to seventh factors, while the slope is relatively constant from the seventh factor on. This indicates that, according to the discontinuity criterion, only six factors should be extracted. The scree test, which derives its name from the geological distinction of a mountain range from its scree -- the debris that has eroded from the range and lies at its base--, holds that after a certain point the curve plotted in Figure 2 will assume a constant slope that will become asymptotic to the x-axis. This line appears to begin immediately following the discontinuity observed between factors six and seven, thus also suggesting that six factors are to be extracted. Since these six factors cumulatively account for a rather large proportion of

the total variance, almost 77 percent, and since inclusion of factors seven and eight would only increase the amount of variance included by 5 and 4 percent, respectively, the six factors suggested by the discontinuity and scree test were extracted.

Another method of assessing confidence in the factors extracted is to examine the amount of variance of each individual variable that is accounted for in the six factors. The percentage of variance accounted for in each variable is given in the column headed "Communalities" at the far right of Table 2. Examination of the communalities shows that most of the variables have a substantial proportion of their variance included in the six factors. Only variable fifteen, the percentage change in aggregate turnout, goes virtually unexplained. One possible explanation for this is that sharp shifts in turnout may be generally accounted for by unique characteristics of individual elections, such as the weather or the personal charisma of the candidates, and hence variance in turnout would be associated with unique variance not included in the alpha factors, which describe only common or shared variance. The relatively large number of high communality values tends to lend additional support to the selection of six factors.

Finally, one may judge the "validity" of the alpha factors as "true" measures of phenomena common to the universe of the construct of electoral alignment by examination of the alpha and behavior domain validity coefficients of the individual factors, provided at the bottom of Table 2. The relatively large behavior domain validity coefficients indicate that the factors are close to "a perfect criterion measure of the property X, as operationally defined,"⁶ although the .58 coefficient of the sixth factor does indicate that the operationalization of the phenomena associated with that factor could be somewhat improved.

Having assessed the validity of the alpha factors extracted, and found them satisfactory in terms of the several criteria discussed above, there remains only to define "the property X" which each of the factors are attempting to describe. This is done by an examination of the factor loadings and then by "naming" the factors in terms of the property which they are thought to define. (The factor names appear at the head of each column of the factor loading matrix in Table 2.)

The first factor has been named "Normal" Competition after an examination of its variable loadings. The phenomena described by this factor closely approximate the conditions postulated by Anthony Downs as occurring during "normal" periods of ideological

stability.⁷ The factor loadings indicate a split of the vote between the two major parties, with a slight margin of victory. Competition in the individual states was also close and historical state party allegiances remained stable. Third party activity was not evident to any measurable degree. Hence the factor with the greatest generalizability tends to describe conditions that have been associated with periods of "normal politics."

The second factor, labeled Realignment: Multi-Party, incorporates elements of critical realignment with elements of third party activity. A shift of votes from the second major party to the winning party and to third parties occurs, perhaps indicating the failure of the second major party to disassociate itself from a rejected paradigm. State historical voting patterns are shown to be in turmoil on this dimension, and a turnover of party is highly likely. In addition, the winning party had not been generally successful in the period preceding the election, but was somewhat more likely to enjoy success in the following era, and particularly in the immediately following election. Third party activity was likely to be successful in capturing electoral college votes.

The third factor also contains elements of realignment, but differs from the second factor primarily in the absence of third party activity. Like the second factor, historical state voting

patterns are upset, with the shifts larger in magnitude and with less deviation of the individual states from the average substantial shift. At the national level, votes are redistributed away from second and third parties to the winning party. Evidence of shifts in state party allegiance is also indicated. This factor has also been designated as describing realignment, but is distinguished from the second factor by limiting the electoral conflict to the two major parties, with the winning party clearly emerging dominant.

The fourth and fifth factors appear to identify patterns of electoral conflict similar to those defined by Campbell and his associates. The fourth factor, termed Deviating, is characterized by stable state party allegiance, a close national margin of victory, a lack of dominance by the winning party in periods preceding or following the election, and a likely turnover of parties. This seems to closely fit the conception of a deviating election, in which the dominant party is upset by the second major party, but recovers soon thereafter. The fifth factor is likewise characterized by a stable electoral cleavage and a close margin of victory, while the result is more likely to be a victory for the incumbent party, hence the designation, Maintaining. These two factors may identify divergent patterns of conflict in otherwise "normal" elections.

The sixth and final factor is more difficult to interpret due to its generally low factor loadings, as indicated by its lower behavior domain validity coefficient compared to the other factors. Some recognizable features are an increase in the number of third parties, a large average state margin of victory for the winner, with only slight deviation of individual states from the average margin, and concomitant increases in the percentage of states carried by the winner and the percentage of states switching party allegiances. This appears to describe the detraction of support from the second major parties to third parties in a period of normal conflict. The net result of these phenomena would appear as the winning party achieving a consensus of the individual states, hence the term "Consensus of States" as a descriptor for this factor.

These six factors then have been inductively developed from the twenty-seven original measures of electoral distribution cited in Table 1. The employment of Cronbach's alpha coefficient of generalizability as a criterion for selection of the factor loading matrix assures that these factors come as close as possible to measuring the differentiating dimensions of the theoretical construct of electoral alignment. Scores for each election on each of these factors would then seem to be the most appropriate measures upon which to base a holistic typology of presidential elections.

Factor scores, then, were calculated for each election on each differentiating dimension identified in the alpha factor analysis, and these scores were used to develop a typology of elections by application of a hierarchical cluster analysis. The factor scores and the groups of elections developed are shown in Table 3.⁸ As the table indicates, seven groups or types of elections were formed. The criterion employed to determine the number of groups to be included in the typology was the criterion suggested by Ward earlier, namely to select the smallest number of groups formed just prior to a sharp loss in within group homogeneity, or an increase in within group variance.⁹ Figure 3 charts the changes in between group variance at stages of groupings from two groups to thirteen groups. A sharp decline in the slope of this line would then indicate a concurrent increase in within group variance, and hence the criterion as stated in the chart, is to select the smallest number of groups just prior to a sharp loss in between group variance.

As Figure 2 indicates, one possible choice was to include just two groups in the typology, as a sharp decline in between group variance occurred in going from two to three groups. Such a decision, however, would have resulted in a typology consisting of one group of nine elections and another group of nineteen, whose

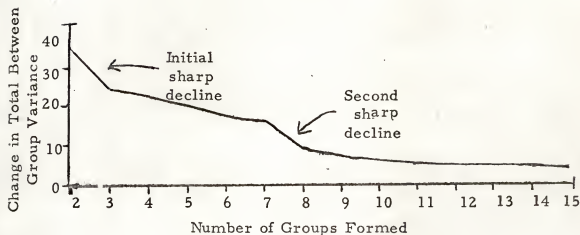
FACTOR SCORES BY ELECTION GROUPS

Election Groups		I. "Normal" Competition	II. Realignment: Multi-Party	III. Realignment: Two-Party	IV. Deviating	V. Maintaining	VI. Consensus of States
I. REALIGNING ELECTIONS							
Type A: Two-Party Realignments							
1896		.53	.60	1.53	-.15	.49	-.84
1920		-1.14	.53	1.42	-.05	-2.72	-.33
1932		-1.68	.93	1.66	-.45	-.29	1.78
Type A Group Mean		-.76	.69	1.54	.08	-.84	.20
Type B: Multi-Party Realignments							
1860		-.23	3.81	-.69	-.99	1.62	-2.14
1912		-.44	1.83	-3.28	1.12	-1.15	2.33
Type B Group Mean		-.33	2.82	-1.98	.10	-.24	.09
II. MAINTAINING ELECTIONS							
Type C: Reconstituting Elections							
1868		.42	-.92	-.13	-.34	.88	.56
1872		-.51	-.45	.22	-.75	1.04	.67
1936		-1.49	-.95	-.74	-.56	.64	1.14
1940		-.20	-1.50	-1.47	.41	.37	-.99
1944		.01	-1.08	-.73	.06	.74	1.16
1956		-.52	-.79	.18	-1.00	.69	.01
1964		-1.27	-1.51	1.57	-2.02	.23	-.01
Type C Group Mean		-.51	-1.03	-.16	-.60	.42	.74
Type D: Restabilizing Elections							
1868		-1.94	-.39	-.62	1.28	2.52	-2.06
1916		-.22	-.55	-.78	3.29	-1.18	-1.99
Type D Group Mean		-.86	-.47	-.70	2.28	.67	-2.02
Type E: Converting Elections							
1900		.23	-.36	-.27	.31	.67	-1.77
1904		-.22	-.16	.13	-.91	-.99	-1.57
1908		.69	-.72	-.87	-.38	-.07	-.95
1924		.11	-.08	-1.60	-1.83	-1.98	-1.36
1928		-1.05	-.85	-.09	-.03	-.07	-1.34
Type E Group Mean		-.05	-.43	-.54	-.55	-.49	-1.40

TABLE 3 (Continued)

III. DEVIATING ELECTIONS					
Type F: Deviating Elections					
L "Normal" Competition	II. Realignment: Multi-Party	III. Realignment: Two-Party	IV. Deviating	V. Maintaining	VI. Consensus of States
1.24	-.40	.19	-.08	.60	-.24
1.05	-.12	.08	1.97	-1.10	.62
1.12	-.10	.31	.67	-.12	.33
1838	.64	-.48	.22	.14	.66
1892	.06	.46	1.77	.29	.22
1952	-.41	1.62	-.84	.17	-.66
1960	.08	.36	.90	.01	.41
Type F Group Mean					
Type G: Deconquering Elections					
1.98	-1.17	.35	-.50	-.84	.25
1876	.52	.52	-2.14	.47	.63
1948	-.10	1.44	-.94	.94	1.60
1968	2.00	.77	-1.19	.19	.82
Type G Group Mean	.25				

Figure 3

Selection of the Number of Groups

theoretical basis for division was not immediately evident. After deciding that two groups would not provide a theoretically interpretable typology, the next sharp decline occurred in going from the seventh to eighth groups. As Figure 2 shows, the decline in between group variance in going from three groups to seven followed a relatively constant slope. However, a relatively sharp decline occurred in going from seven to eight groups, after which the curve again assumed a relatively constant slope. After examination of the electoral typology formed by the seven groups, this typology was selected as being in accord both with Ward's empirical criterion and with the criterion of theoretical interpretability. An additional

indication of the "tightness" of the groups is that only 36.7 percent of the total variance in the electoral groups is within group variance.

As in the manner of interpreting the alpha factors, names were applied to each of the election groups by examining the patterns evident in the factor scores from which they were grouped. As Table 3 shows, the seven groups were divided into three broader generic categories: realigning, maintaining, and deviating, in a manner that will be explained after a discussion of the characteristics of the individual groups.

Two types of elections in the category headed "Realigning Elections" were distinguished. The first type identified, labeled Type A: Two Party Realignment, consists of three elections with fairly high scores on factor two and even higher scores on factor three. The combination of the high scores on these factors, and the low scores on the "normal" competition factor clearly point to classification of these elections as "critical" as defined in Chapter Two by both Key and Burnham. The second type, Type B: Multi-Party Realignment, shared extremely high scores on factor two and also scored negatively on "normal" competition, but was distinguished from Type A by negative scores on the third factor. This group of elections thus appears dominated by the elements

that composed the second factor, "Realignment: Multi-Party," hence the designation of these elections as Multi-Party Realignments.

The next three types of elections have been generically classified as maintaining. Type C: Reconstituting scores negatively on the normal competition and realignment factors, but positively on the maintaining and consensus of states factors. The pattern of this electoral type seems to be one in which the incumbent party is returned to office with an even greater consensus of states than in its previous victory, hence the term "Reconstituting." Type D: Restabilizing Elections is composed only of the two elections that immediately followed Type B Multi-Party Realignments. These elections, while themselves scoring negatively on realignment dimensions, score positively on the deviating dimension even though no turnover of party was involved. The unique nature of these elections seems to have been their ability to "restabilize" the electorate into stable two-party competition, after a strong third party challenge in the previous election. The decline of third party vote would account for the positive deviating scores as voters necessarily to the two major parties involves vote switching of some magnitude, although the maintenance of the previously victorious party in office justifies their categorization as maintaining. The existence of this type of election may reflect

the ability of the major parties to quickly respond to issues capable of generating strong third party support. Type E: Converting Elections also scores negatively on the realignment dimensions, but is generally negative on the deviating, maintaining and normal competition factors as well. These elections might be described as "anti-alignments," for while they generally returned the incumbent party to office, they neither increased or decreased net support for the party. These elections are then believed to be associated with alignments which are generally unstable, but are maintained by shifting appeal to divergent groups of voters, hence maintaining a minimal winning coalition. They have been termed Converting after their ability to convert a previously victorious coalition, without the continuity of electoral cleavage generally associated with lasting alignments.

The final two electoral types distinguished have been classified as deviating. Type F: Deviating Elections scores positively on the normal competition and deviating dimensions. Some realignment is evident, as would be required to effect the turnover of parties, and the shifts in support of states are evident in the positive scores on the consensus of states dimension. These elections then fit the specific definition of deviating elections described by Pomper, i.e., a turnover of party in a period of normal competition. The final

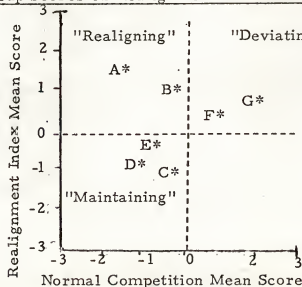
group, Type G: Disintegrative Elections, follows the same general pattern as deviating elections, but is distinguished from Type F by negative scores on the deviating factor. These scores no doubt result from the greater than usual shifts in historical state voting patterns evidenced in these elections. The three elections that comprise this group were all marked by the introduction of third party movements: the Greenbacks in 1876, the Dixiecrats in 1948, and the American Independents in 1968. Each of these movements had regional bases of power, the Greenbacks in the Midwest and the latter two in the South. The shifts in the historical voting patterns of the states supporting these new movements were then sufficient to distinguish these elections from normal deviating elections, and actually only the 1968 election effected a change in party control of the presidency. The term "disintegrative" has been applied to these elections to suggest the breakdown of the previous electoral cleavage without the concurrent production of a stable replacement. Both the 1876 and 1948 elections were followed by normal deviating elections as electoral cleavages were somewhat restabilized. What will follow the 1968 disintegration of the previous electoral coalition is as yet, of course, unknown.

While the unique characteristics of each of the seven election types have been discussed above, the rationale for their generic

classifications as realigning, maintaining, or deviating has yet to be discussed. While it is, of course, impossible to represent a six-dimensional typology of elections in two-dimensional space (as the Pomper typology shown in Figure 1), Figure 4 shows the relative positions of the electoral groupings on two of the more important phenomena identified: realignment and normal competition. For the purposes of this summary, the figures plotted on the \bar{y} -axis represent a realignment index compiled by computing the mean scores of all elections in a group on both factors two and three, which were said to jointly describe the phenomenon of realignment. The x-axis merely describes the group mean scores on the normal competition factor. Hence, Figure 4 contains a summary of information from the three dimensions that were found to have the greatest generalizability.

Figure 4

Election Group Scores on Realignment and Normal Competition



Division of Figure 4 into quadrants by the dotted lines perpendicular to the zero points of both scales displays the relationships upon which the categorizations of the groups are based. Groups A and B both fall into the upper left or "Realignment" quadrant. This indicates positive mean scores on the realignment index and negative mean scores on the normal competition index or the general conditions of realignment discussed earlier. Groups C, D, and E all fall into the lower left, or "Maintaining" quadrant, as the result of their negative realignment and negative normal competition mean scores. Groups F and G are placed in the upper right, or "Deviating" quadrant, by sharing slightly positive realignment index mean scores and positive normal competition scores. No groups at all fell into the lower right quadrant which would be characterized as elections in which there was competition without any elements of realignment, a condition which is probably rarely, if ever, fulfilled.

While the categorizations of the seven election types into three broader categories on the basis of the relationships shown in Figure 4 are based on only three of the six identified differentiating characteristics, they are themselves held to be useful heuristic constructs developed inductively from the three most important of the differentiating dimensions.

The heuristic value of the broader categorizations is shown in Table 4 which compares the election types and categories developed in this chapter with those developed previously by Pomper and Burnham.

In terms of definition of electoral realignments, Table 4 shows three general areas of agreement and two of disagreement among the methods employed in this paper (hereafter referred to as the "Shade" types and categories) and those of Burnham and Pomper. All three studies agree that a realignment occurred during the period surrounding the Civil War, although Burnham identifies 1854 as the peak of the realigning period, while the Shade typology identifies the 1860 presidential election, and Pomper the 1864 election. The disagreement between the Shade and Pomper findings may merely be a matter of rhetoric, for the Shade typology recognizes that the realignment initiated in 1860 was not stabilized until 1864, and so the Shade and Pomper typologies can be said to be in general agreement on the definition of this realignment.

A second general area of agreement occurs in 1896, defined by Shade as realigning and by Burnham as the election immediately following the midpoint of his realigning period. Pomper, however, classifies 1896 as a non-critical realignment, and thus is somewhat

TABLE 4

COMPARISON OF ELECTORAL TYPOLOGIES

<u>Election</u>	Typology		
	<u>Shade</u> (Type)	<u>Shade</u> (Category)	<u>Pomper^a</u> (Type)
			<u>Burnham^b</u> (Period Midpoint)
1860	<u>Multi-Party Realignment</u>	<u>Realigning</u>	Deviating
1864	Restabilizing	Maintaining	Realigning
1868	Reconstituting	Maintaining	Maintaining
1872	Reconstituting	Maintaining	Maintaining
1876	Disintegrative	Deviating	Maintaining
1880	Deviating	Deviating	Maintaining
1884	Deviating	Deviating	Deviating
1888	Deviating	Deviating	Maintaining
1892	Deviating	Deviating	Deviating
1896	<u>Two-Party Realignment</u>	<u>Realigning</u>	Converting
1900	Converting	Maintaining	Maintaining
1904	Converting	Maintaining	Maintaining
1908	Converting	Maintaining	Maintaining
1912	<u>Multi-Party Realignment</u>	<u>Realigning</u>	Deviating
1916	Restabilizing	Maintaining	Deviating
1920	<u>Two-Party Realignment</u>	<u>Realigning</u>	Maintaining
			(<u>Realignment period, midpoint, 1854</u>)
			<u>Realignment period, midpoint, 1874</u>
			<u>Realignment period, midpoint, 1894</u>

^a Gerald Pomper, Elections in America, 111.

^b Walter Dean Burnham, Critical Elections and the Mainsprings of American Politics, 16.

^c Classified by the author according to Pomper's criteria, see Pomper, Elections in America, 104.

TABLE 4 (Continued)

<u>Election</u>	<u>Shade</u> (Type)	<u>Shade</u> (Category)	<u>Pomper^a</u> (Type)	<u>Burnham^b</u> (Period Midpoint)
1924	Converting	Maintaining	Maintaining	
1928	Converting	Maintaining	Realigning	* <u>Realigning period,</u>
1932	<u>Two-Party Realignment</u>	Realigning	Realigning	<u>midpoint, 1930</u>
1936	Reconstituting	Maintaining	Maintaining	
1940	Reconstituting	Maintaining	Maintaining	
1944	Reconstituting	Maintaining	Maintaining	
1948	Disintegrative	Deviating	Maintaining	
1952	Deviating	Deviating	Deviating	
1956	Reconstituting	Maintaining	Deviating	
1960	Deviating	Deviating	Converting	
1964	Reconstituting	Maintaining	Converting	
1968	Disintegrative	Deviating	Deviating ^c	

^a Gerald Pomper, Elections in America, 111.

^b Walter Dean Burnham, Critical Elections and the Mainsprings of American Politics, 16.

^c Classified by the author according to Pomper's criteria, see Pomper, Elections in America, 104.

at odds with the Shade and Burnham conclusions. The final area of agreement centers around the election of 1932, identified by both Shade and Pomper as realigning, and by Burnham as the election immediately following the peak of a realignment period. Pomper, however, also classifies the election of 1928 as realigning, while Shade types the election as a non-realigning conversion of the previous Republican coalition. Pomper's classification of 1928 as realigning does, however, bracket Burnham's 1930 midpoint of his realigning period.

The two general areas of disagreement occur around the 1876 election when the coalition of Lincoln Republicans established in the 1860s began to breakdown. Burnham classifies 1874 as the midpoint of another period of realignment, while Pomper classifies the elections of 1872 and 1876 as maintaining the Lincolnian coalition. The sharp disagreement between the Pomper and Burnham conclusions can perhaps be best understood in terms of the more detailed Shade typology. In the Shade typology, 1876 is classified as a disintegrative election, in which the previously dominant Republican coalition began to break-down, but with the Democrats unable to establish an enduring coalition to replace it. This is evident in the long series of deviating elections shown by both Pomper and Shade as characterizing the period between 1880 and the 1896 realignment. This

period of what might be termed electoral chaos seems analagous to the chaotic situation described by Kuhn as occurring when a scientific paradigm breaks down but is not immediately replaced by a new paradigm:

Because it demands large-scale paradigm destruction and major shifts in the problems and techniques of normal science, the emergence of new theories is generally preceded by a period of pronounced professional insecurity. As one might expect, that insecurity is generated by the persistent failure of the puzzles of normal science to come out as they should. Failure of existing rules is the prelude to a search for new ones.¹⁰

Hence Burnham's technique of identifying shifts in electoral cleavage may have mistaken the insecurity of the electorate suggested by a series of deviating elections, as well as the failure of the Democrats to develop a paradigm to successfully replace the decomposed Lincolnian nationalism, for a period of genuine realignment. This explanation demonstrates the value of the distinctions made in the fully developed Shade typology, in particular the distinction between disintegrative and realigning elections.

One final point of disagreement among the typologies is the Shade definition of the elections of 1912 and 1920 as realigning. Burnham's technique gives no indication of realignment during this period, and Pomper classifies the 1912 election as deviating

and the 1920 election as maintaining, purely on the basis of the conception of the Republican party as the majority party after, in his terms, the non-critical conversion of 1896. The electoral upheaval of 1912 brought on by the Progressives was surely as convulsive as the multi-party factionalism of 1860, and seems to more clearly belong in a classification with that election than with the elections of 1952 and 1956, as in the Pomper typology. While 1860 is also classified by Pomper as deviating, it is argued that the Shade typology presents a more realistic conception of electoral alignments by categorizing 1860 and 1912 as unique upheavals of the electorate, both of which were restabilized in the following election with the return of the incumbent to power and a decline of the third party movements. This phenomenon clearly indicates an ability of the major parties to adapt to issues generated from outside their normal structures, and this characteristic of these elections clearly deserves to be distinguished from the relatively mild ideological conflict that characterized the elections of 1952 and 1956. The ability of the inductive Shade typology to make this differentiation undoubtedly results from the broader base of electoral characteristics from which it was derived as opposed to the Pomper typology which was based on only two characteristics of elections.

The inductive typology of elections developed in this chapter then has been shown to be in general congruence with previously developed typologies, and in cases of incongruence was argued to have greater explanatory ability of the incongruent phenomena than either of the two previously developed typologies. While the three broad categories developed by analysis of the three greatest differentiating dimensions were shown to be heuristically useful in comparison with the Pomper and Burnham typologies, the more detailed typology developed on the basis of the additional information contained in the remaining three dimensions will be used in later analyses.

NOTES

1. The tenth variable is a "dummy" variable which is coded as "1" if the election involved a turnover of party and "0" if the incumbent party was returned to office.
2. Obviously no data were available for the 1968 election on variable twelve since there have been no following elections, and likewise no data were available for the elections of 1952, 1956, 1960, 1964, and 1968 on variable fourteen which required the existence of five following elections. In the conduct of the factor analysis, these cases were identified as "missing data," and were not included in the computation of correlation coefficients between variables twelve and fourteen and the other variables. Data for these elections were included in the computation of all other correlation coefficients however. For the precise manner in which "missing data" are handled in the SPSS factor analysis program See Nie, Bent, and Hull, op. cit., 236, "Option 2." Examination of factor scores of these elections indicate that while some distortion is evident as the result of this "missing data," the distortion is not great enough to bias the placement of these elections into the types formed by the hierarchical cluster analysis.
3. Burnham, op. cit., 18-21.
4. For the importance of historical voting patterns in analyzing electoral alignments see Key and Munger, op. cit. The importance of sectional deviation from national trends in definition of realignments is given in Charles Sellers, "The Equilibrium Cycle in Two Party Politics," Public Opinion Quarterly 29 (1965), 16-38.
5. R. J. Rummel, Applied Factor Analysis (Evanston: Northwestern U. Press, 1970), 354-367.
6. Tryon, op. cit., 237.
7. Anthony Downs, An Economic Theory of Democracy (New York: Harper, 1957). While Downs' conception of normality has been criticized as "simplistic" due to its unidimensional representation of ideological conflict (see Donald E. Stokes, "Spatial Models of Party Competition," in Angus Campbell, Phillip E. Converse, Warren E. Miller, and Donald E. Stokes, ed., Elections and the Political Order (New York: Wiley, 1966), 161-179), his line of reasoning

7. [continued] has been extended into n-dimensional frames of reference (see Otto A. Davis, Melvin J. Hinich, and Peter C. Ordeshook, "An Expository Development of a Mathematical Model of the Electoral Process," American Political Science Review LXIV (1970), 426-448). As economists have long employed two-dimensional summary representations of multi-dimensional phenomena as teaching devices, the heuristic value of the Downsian conception of normality is held to be only marginally diminished by its unidimensional base.
8. The computation of factor scores was conducted by an original computer program, written in MATLAN, which employed Bartlett's formula for factor score estimation (see Morrison, op. cit., 293). A copy of this program, which can be supported by most FORTRAN IV compilers, is contained in Appendix I of this dissertation.
9. Ward, op. cit., 236-244.
10. Kuhn, op. cit., 67-68.

CHAPTER FIVE

THE SOCIAL-ECONOMIC-POLITICAL CONCOMITANTS OF ELECTION TYPES

The goal of this chapter is to identify patterns of societal change that coincide with the patterns of electoral alignment identified in the preceding chapter. The technique selected to identify such patterns is a stepwise multiple discriminant analysis of the groupings of elections based upon the fifty-four measures of societal change described in Table 5. The specific variables in Table 5 have been classified as to the general type of societal change that they are intended to operationalize.

The first fifteen variables are measures of general social change, and are for the most part self-explanatory. In general the variables measure only the change in the phenomenon that has taken place since the previous election. In some cases, marriage and suicide rates, for example, the level of the variable was also included, as observation of the raw data indicated that in these cases levels as well as rates of change had potential to discriminate election types. The social variables selected were intended to operationalize the degree of conflict or harmony among individual

TABLE 5

INDEPENDENT VARIABLES IN DISCRIMINANT ANALYSIS^{a b}I. Measures of Social Change

1. change in population
- *2. change in urbanization
- *3. change in birth rate
4. marriage rate
- *5. change in marriage rate
- *6. change in divorce rate
7. change in death rate
8. suicide rate
- *9. change in suicide rate
- *10. change in mental hospital admission rate
11. internal migration rate
12. change in internal migration rate
13. number of immigrants admitted
14. change in number of immigrants admitted
15. change in religious membership
16. change in per capita postage stamps issued

II. Measures of Political Change

17. # convention ballots required to nominate winner
18. # convention ballots required to nominate loser
- *19. percent bipartisan platform pledges
20. percent contradictory platform pledges
- *21. percent unique platform pledges
22. percent difference in campaign spending (winner/loser)
- *23. change in winner's campaign spending
24. change in loser's campaign spending
25. congressional houses controlled by incumbent party--1st Congress
- *26. congressional houses controlled by incumbent party--2nd Congress
27. number of vetoes by incumbent
28. number of incumbent's vetoes overridden
29. congressional efficiency
- *30. presidential incumbent running for reelection

III. Measures of Public Policy Change

- *31. change in federal nondefense expenditures
- 32. change in federal defense expenditures
- *33. change in per capital federal taxation
- 34. change in per pupil education expenditures
- 35. change in active duty military personnel

IV. Measures of Economic Change

- 36. change in per capita GNP
- *37. change in industrial production index
- 38. change in wholesale price index
- 39. change in consumer price index
- 40. change in average industrial wage index
- *41. change in gross farm income
- *42. change in total business concerns
- 43. business failure rate
- *44. change in business failure rate
- 45. short term interest rate
- 46. change in short term interest rate
- *47. long term interest rate
- *48. change in long term interest rate

V. Measures of Intellectual Change

- *49. change in per capita newspaper circulation
- 50. change in book and pamphlet copyright registrations
- 51. change in periodical copyright registration

VI. Measures of Technological Change

- *52. change in patent applications
- 53. change in mineral energy fuel consumption
- 54. change in pig iron production

^a An asterisk preceding a variable number indicates that the variable was selected for inclusion in the discriminant function.

^b Data sources for the variables listed in this table are detailed in Appendix II.

members of society. The measurement of postage stamp issuance was intended to measure expansion or contraction of channels of communication among individuals. The operationalization intended by the other variables is generally self-evident.

The measures of political change measure several phenomena. Variables seventeen and eighteen measure the amount of intra-party competition for the presidential nomination. Variables nineteen through twenty-one measure the issue-distances of the major party platforms, while variables twenty-two through twenty-four indicate variance in the campaign efforts of the major parties, measured in dollar terms. Variables twenty-five through twenty-nine measure different dimensions of the relationship of the incumbent president with the legislatures seated during his administration. The twenty-ninth measures the "efficiency" of these legislatures by calculating the percentage of bills introduced that actually passed both houses. Finally, variable thirty measures the impact of the presidential incumbency advantage in seeking reelection.

Five measures of public policy change were included, including variables thirty-one through thirty-three, which measure policy changes at the federal level; variable thirty-four, which measures policy change at the state and local level, in terms of expenditures

for education; and variable thirty-five, which gives an indication of increases in military personnel and hence operationalizes the tendency of an administration to resort to force in conduct of foreign affairs.

Thirteen measures of economic change were developed, each of which appear self-explanatory. And finally, intellectual change was operationalized by variables measuring newspaper circulation, and book, pamphlet, and periodical copyright registrations; and technological change was operationalized by measures of change in patent applications, mineral energy fuel consumption, and pig iron production.

The twenty-one variables identified by an asterisk in Table 5 were those selected in the discriminant function as contributing to the discrimination of the election types. The remaining variables were not found to contribute to the discrimination. Surprisingly, each area of societal change operationalized contributed at least one variable to the discriminant function. Since the original data were standardized prior to calculation of the discriminant coefficients, the relative importance of each variable in discriminating the election types can be determined by examining the size of that variable's coefficient in the discriminant function.¹ These coefficients are shown in Table 6.

TABLE 6

DISCRIMINANT FUNCTION COEFFICIENTS

<u>Independent Variables</u>	<u>Discriminant Coefficient</u>
<u>SOCIAL CONFLICT</u>	
change in urbanization	-.09
change in birth rate	.24
change in marriage rate	.38
change in divorce rate	-.14
change in suicide rate	.30
change in mental hospital admissions	-.05
<u>POLITICAL CONFLICT</u>	
percent bipartisan platform pledges	.17
percent unique platform pledges	.11
change in winner's campaign expenditures	-.19
houses of 2nd Congress controlled by incumbent party	.09
presidential incumbent running for reelection	.20
<u>PUBLIC POLICY</u>	
change in federal nondefense expenditures	.69
change in per capita federal taxation	-.72
<u>ECONOMIC CHANGE</u>	
change in industrial production	1.00
change in gross farm income	.23
change in total business concerns	.23
change in business failure rate	.34
long term interest rate	.35
change in long term interest rate	-.32
<u>INTELLECTUAL CHANGE</u>	
change in per capita newspaper circulation	-.18
<u>TECHNOLOGICAL CHANGE</u>	
change in patent applications	.07

The discriminant coefficients clearly indicate that the electorate is most responsive to change in the economic system. The variable with the greatest discriminating power measures change in industrial production. While other economic variables included in the function have smaller coefficients, all point to a conception of a prosperous economy. Long term interest rates are high and stable, and while the business failure rate has increased, it has been accompanied by an increase in the total number of concerns in business, suggesting that a prosperous economy may encourage an increase in speculative, and hence more risky, business activity. And prosperity in the industrial sector of the economy is matched, albeit to a somewhat lesser degree, by an increase in gross farm income.

A second area of change to which the electorate appears highly responsive is change in the public policy outputs of the incumbent administration. The discriminant function suggests that the electorate responds sharply to change in per capita federal taxation, as well as to change in federal nondefense, or domestic, spending.

The coefficients of the social change variables indicate a trend of what might be termed social harmony. Birth and marriage rates increase, while divorce, urban migration, and mental hospital

admission rates decline. The increase in suicide rate may be an anomaly, but perhaps can be explained as resulting from the greater psychological pressure of individual failure in a period of overall harmony and prosperity.

Examination of the coefficients of the political change variables confirms the long acknowledged advantage of the presidential incumbent, although it is interesting to note that the size of the discriminant coefficients indicate that the incumbency advantage is less important than the policy outputs of the previous administration in "determining" the type of electoral alignment most likely to follow. The importance of presidential campaigns is reflected in the coefficients of the variables describing the amount of agreement in the content of the platforms of the major parties, as well as by the decline in monetary effort expended in the campaign by the winning party. In general, the campaign described in the discriminant function is one in which an incumbent candidate, with majority support in the Congress immediately preceding the election, runs on a platform that is either in agreement with or talks past the opposing party, and spends less effort campaigning than in the previous election. This appears to be a neat summary of what has earlier been referred to as "normal politics." The lack of conflict in party platforms suggests that ideological conflict was held to a minimum, another characteristic of "normal politics."

In the final two areas of societal change analyzed, the discriminant function indicates a decline in per capital newspaper circulation, suggesting a decline in electoral attentiveness during periods of normal politics; and an increase in patent applications, suggesting increased technological creativity in periods of prosperity and social harmony.

The general portrait painted by the discriminant analysis is that of normal politics in a economically prosperous and socially harmonious period. The relationships of the individual election types to these phenomena can be analyzed by computation of discriminant scores for each election on the discriminant function.² These scores are shown in Table 7.

Table 7 shows that reconstituting elections score highest on the discriminant function, indicating that elections which strengthen support for existing political coalitions are generally accompanied by periods of greatest prosperity and harmony, and are periods of normal politics. Disintegrative elections score second highest, indicating that the ideological deviance of the third party movements initiated in those elections was not accompanied by any societal crisis of the magnitude required to effect a shift in paradigms. Converting elections also score positively, but far lower on the scale than reconstituting elections, suggesting that the concurrent

TABLE 7
DISCRIMINANT SCORES BY ELECTION GROUP

		<u>Discriminant Score</u>
I.	<u>REALIGNING ELECTIONS</u>	
	A. Two-Party	
	1896	-733.5
	1920	-733.5
	1932	-733.5
	B. Multi-Party	
	1860	-107.8
	1912	-107.8
II.	<u>MAINTAINING ELECTIONS</u>	
	C. Reconstituting	
	1868	629.1
	1872	629.1
	1936	629.3
	1940	629.0
	1944	629.1
	1956	629.1
	1964	629.1
	D. Restabilizing	
	1864	-130.0
	1916	-130.0
	E. Converting	
	1900	43.1
	1904	43.1
	1908	43.1
	1924	43.1
	1928	43.1
III.	<u>DEVIATING ELECTIONS</u>	
	F. Deviating	
	1880	-378.4
	1884	-378.4
	1888	-378.4
	1892	-378.4
	1952	-378.4
	1960	-378.4

TABLE 7 (Continued)

		<u>Discriminant</u> <u>Score</u>
G. Disintegrative		
	1876	113.9
	1948	111.2
	1968	113.1

differences in scale of prosperity and harmony may be responsible for the moderate shifting of voters that distinguishes converting from reconstituting elections.

Four types of elections scored negatively: two-party realignments, multi-party realignments, deviating, and restabilizing elections. The negative scores of these elections indicate that substantial voting shifts are generally accompanied by economic decline, social disharmony, and ideological conflict in periods of abnormal politics.

Multi-party realignments are restabilizing elections score and very closely on the scale. The proximity of these scores and the fact that the elections that comprise these types are contiguous in time lends further support to the suggestion made earlier that the realignments of 1860 and 1912 spread out over two elections. Deviating elections bear higher negative scores than both multi-party realignments and restabilizing elections, calling attention to the need for additional research on what distinguishes a deviating election from a realignment. The answer may well lie in the responses of the parties to the societal crisis at hand. As suggested earlier, the period from 1880-1896 was "ripe" for the establishment of a realignment behind the Democratic party, as the Republican coalition had begun decomposition as early as 1876. Instead the

period was marked by a series of deviating elections, accompanied by persistent cycles of economic instability and social conflict. The suggestion made here is that the failure of the Democratic party to institutionalize a political paradigm to replace Lincolnian nationalism was the major stumbling block to a stable realignment in the period beginning in 1880. Hence the ideological bases of party behavior may well be the distinguishing feature of deviating versus realigning elections.

Finally, the most negative scores on the scale belong to two-party realignments. This confirms Burnham's conclusion that realignments generally occur in periods of social unrest, economic decline, and ideological conflict. Thus two-party realignments must come closest to fulfilling the definition of paradigm shifts presented in Chapter Two. This point will undergo further analysis in the following chapter.

In summary then, the multiple discriminant analysis discussed in this chapter showed that reconstituting, converting, and disintegrative elections were generally associated with periods of social and economic prosperity; and realigning, deviating and restabilizing elections were associated with periods with opposite characteristics. In the following chapter, the findings of these empirical analyses will be reexamined in light of the hypotheses derived from the theory of

political paradigms in Chapter Three. This final chapter will then attempt to assess the degree of support for the theory of political paradigms provided by the empirical analyses described above.

NOTES

1. Morrison, op. cit., 130.
2. Discriminant scores are computed by substituting the original standardized score for each variable into the discriminant function, multiplying by the discriminant coefficient, summing, and adding the constant term for each group provided by the discriminant analysis. For a more complete description of this procedure see Francis J. Kelly, et al., Research Design in the Behavioral Sciences: Multiple Regression Approach (Carbondale: Southern Illinois U. Press, 1969), 234-239.

CHAPTER SIX

AN ASSESSMENT OF THE THEORY OF POLITICAL PARADIGMS

In this final chapter, results of the empirical tests described in the preceding two chapters will be reexamined to determine the amount of support they provide for the hypotheses stated at the conclusion of Chapter Three. Some methodological caveats that must be considered in interpretation of these results will be discussed, and a general assessment of the theory of political paradigms will be attempted. Finally, the implications of the theory for the future of American politics will be analyzed.

Empirical Support for Hypotheses

At the conclusion of Chapter Three, five hypotheses, derived from the theory of political paradigms, were developed which if confirmed by empirical investigation would support the validity of the theory. This section will examine the degree of support provided for each hypothesis by the inductive analyses described above.

The first hypothesized relationship was that an inductive comparison of the historical distributions of the electorate would

distinguish paradigm-shifting elections from "normal" competition elections. Support for this hypothesis was provided in two ways. In the first place, two of the six differentiating dimensions identified in the alpha factor analysis clearly described phenomena associated with sharp and durable shifts of electoral loyalty, a condition that constitutes one of the defining characteristics of paradigm shifts. In the second place, a general category of realigning elections, consisting of two inductively derived types, was identified in analysis of the results of a hierarchical cluster analysis of the scores of the individual elections on each of the six differentiating dimensions. The analyses suggest that the elections of 1860, 1896, 1912, 1920, and 1932 are distinguishable from other elections in that they comprised sharp and durable shifts of the electorate. Hence the inductive analyses of electoral distributions tend to confirm the existence of the first relationship hypothesized from the theory of political paradigms.

The second hypothesis postulated that paradigm-shifting elections would coincide with some type of societal crisis in order to inspire the attentiveness of the electorate, a hypothesis supported by the quotation from Burke cited in Chapter Two. The results of the multiple discriminant analysis provide remarkable support for this hypothesis. The phenomena described by the discriminant function

provided a scale of societal harmony/disharmony, and the discriminant scores of the elections identified as realigning were toward the negative, or crisis, end of the scale. These scores then indicate that realigning shifts of the electorate did in fact coincide with periods of individual social conflict, economic decline, increased intellectual attentiveness, and an "abnormal" increase in the issue-distances or ideologies of the major parties. The fact that restabilizing and deviating elections also scored negatively on the discriminant phenomenon indicates that not all societal crises cause realignments and suggests that some unique response to the crisis, perhaps on the part of the parties, is required to effect a shift in the content of the governing paradigm.

This suggestion leads directly to consideration of the third hypothesis which postulated that at points of paradigm shifts political parties would serve the purpose of institutionalizing competitive paradigms. Indeed the shifts in party loyalties were said to be an intrinsic component of the "exemplary past achievement" aspect of paradigm shifts. Analysis of support for this hypothesis must come from an analysis of the ideological positions of the parties in the elections classified as realigning. A brief attempt at such an analysis follows.

The election of 1860 clearly presented an ideological choice to the electorate. Historian Elting Morison points out that four distinct ideological positions were represented by the four competing parties. The three Democratic splinter parties all harkened back to the existing Jacksonian paradigm of political laissez-faire.¹ Bell held for absolute laissez-faire, or business as usual; Douglas attempted a compromise solution within the paradigm; and Breckenridge felt that the breakdown of the Jacksonian paradigm over the slavery issue should lead to a division of paradigms within the political community, with separate paradigms for homogeneous sub-groups.² Lincoln alone offered a new paradigm based upon the ideological premise that nationalism superseded the benefits of political laissez-faire, and that the nation-state should be preserved at all costs. While it may have taken two presidential elections and a civil war to completely effect the shift from the Jacksonian to the Lincolnian paradigm, the ability of the paradigm to attract the loyalty of the political community (of the North) to go to war to defend it should in no way detract from the conception of the dominance of the paradigm, but should rather point to the strength of the paradigm content, as contemporary politicians are finding that support for paradigms does not always include a mandate to

commit the community to the use of force in its behalf. The sharpness of the split at the election of 1870 and the enduring dominance of the Republican Party in the series of elections that followed until 1876 demonstrates that the election of 1860 fulfilled the conditions of a paradigm shift, and thus tends to support the third hypothesis.

In the next election defined as realigning, the election of 1896, the electorate faced a dichotomous, but clearly ideologically distinct, choice. In this realignment the electorate forsook the rising populism of the free-silver Democrats in favor of the conservative protectionism of the McKinley Republicans. That the election was dominated by economic issues is a clear reflection of the economic decline of the 1890s under less radical, but still Democratic, leadership. In fact, the ideological break between Bryant and the leadership provided by Cleveland indicated a complete breakdown of the preceding paradigm as both parties offered alternatives ideologically distinct from the content of the previously governing paradigm. (As it has been previously suggested that after the disintegration of the Lincolnian coalition in 1876 no truly dominant paradigm emerged until 1896, it would probably be more accurate to state that in 1896 both parties offered paradigms to replace an ideological void, rather than a previously dominant paradigm.)

The next realignment, according to the typology, occurred in 1912 when after a period of conservative Republican protectionism another multi-party choice faced the electorate. In a drastic shift from the conservatism of Taft, the electorate aligned behind the New Freedom liberalism of Wilson, although it took the restabilizing election of 1916 to effect the shift in paradigm. The New Freedom paradigm had an uncharacteristically brief period of dominance, as its liberal promise became entangled in the first world war, and, in 1920, another realignment was effected when a disenchanted electorate endorsed Harding's proposed return to neo-isolationism and economic individualism over Cox's effort to maintain the New Freedom paradigm by endorsing its content as well as Wilson's internationalism. Hence the period from 1912-1920 was characterized by rapid shifts of electoral loyalty between two competing paradigms: economic individualism and neo-isolationism on the one hand, and New Freedom liberalism and internationalism on the other.

The economic individualist paradigm dominated the administrations of Harding, Coolidge and Hoover, through the social crisis produced by the Great Depression. At the election of 1932, Roosevelt's proposed New Deal paradigm of positive governmental action in the direction of the economy replaced the conservative

paradigms espoused by Hoover, and a paradigm shift was effected that some analysts, as well as the electoral typology, suggest remains dominant in the current American political community.³

This brief examination of the ideological distances of the parties at the elections defined as realigning generally confirms Burnham's earlier conclusion that realignments are accompanied by greater than normal ideological conflict, and thus supports the validity of the third hypothesis derived from the theory of political paradigms.

The final two hypotheses developed in Chapter Three proposed that periods prior to paradigm shifts would be marked by distortions of normal competition and that periods following such shifts would be marked by restoration of normal competition. Little support for these hypotheses is contained in the results of the empirical analyses. There seems to be no unique pattern of electoral distributions that can be expected to precede or follow paradigm shifts. In fact, one striking feature of the realigning elections identified in the typology is their lack of periodicity, a characteristic suggested by Burnham and others as distinctive of electoral realignments. The periods between paradigm shifts suggested in the typology are thirty-six years, sixteen years, eight years and twelve years, with the current paradigm suggested as entering

its fortieth year. This finding is in direct conflict with Burnham's argument that realignments occur once a generation, or once every thirty to thirty-eight years, but supports Pomper's contention that there is no theoretical justification for a cyclical conception of realignments.⁴

In summary then, substantial support for the validity of the theory of political paradigms was provided in conjunction with three of the five hypotheses derived from the original statement of the theory by an examination of the results of the empirical analyses. The lack of support for the final two hypotheses may suggest that political scientists may have been negligent to date in attempting to uncover the characteristics of normal politics in American political history.

Methodological Caveats

While the above discussion indicated strong support for the validity of the theory of political paradigms, the results of the analyses conducted to "test" the hypotheses are subject to some methodological caveats of interpretation. In the first place, the hypotheses were not tested in any strict statistical, i. e., probabilistic sense, but rather were argued to be congruent with the findings of inductive analyses of the dependence structure of multivariate data observations. Strictly speaking, then, no statistical inference can be made to the probability that the "confirmed" hypotheses were not falsely accepted.

In addition, although standard data sources were employed,⁵ the data in the discriminant analysis must be considered "soft" for the period preceding 1900, and particularly so for the era surrounding the Civil War.

Finally, there is an implicit flirtation with the so-called "ecological fallacy," which points out that relationships based on aggregate data are not necessarily good substitutes for relationships based on individual data. While this analysis has focused on the aggregate behavior of the political community in periods of paradigm shifts, the implicit assumption has been that support for these aspects of the theory of political paradigms implies support for the individual social psychological aspects of the theory. While it is agreed that survey data would provide a more accurate representation of individual behavior, the absence of any such data for the period prior to 1936 precludes its employment in the analysis of paradigm shifts as the typology indicates that the last such shift occurred in 1932. Therefore, rather than fall prey to the "academic overkill" that Douglas Price argued followed the original statement of the ecological fallacy by W. S. Robinson,⁶ the possibility of such a fallacy is noted, but it is argued that the strength of the deductive theoretical relationship shown between aggregate behavior and individual behavior in the

development of the theory suggests that the ecological fallacy has been avoided in this research. Final resolution of this question however will lie with a later generation of political scientists with more extensive survey data archives and hopefully additional electoral realignments to subject to analysis.

Despite the caveats mentioned above, the main conclusion of this dissertation is that American political history since 1860 is best described as a sequence of shifting ideological paradigms which define the "rules of the game," to use Schattschneider's phrase. If the analogy of scientific paradigms can be extended a bit further, the criterion of successful science developed by James B. Conant, a tutor of Kuhn's at Harvard, can be applied to the political system. Conant argued that science is successful not to the extent that it approaches "truth," but only to the extent that it maintains its continuity.⁷ By this criterion the American political system can be described as highly successful as it approaches its two-hundredth birthday. But it may be best to end on a note of caution by observing that the historical ability of the system to adapt to social, economic, political, intellectual and technological change provides no guarantee that the process is automatic, and care must be taken to insure that this ability will be preserved.

Political Paradigms and the Future of
of American Politics

The electoral typology developed in Chapter Four indicates that contemporary American politics is in a period similar to the era following the disintegration of the Lincolnian coalition in 1876. The Roosevelt coalition began to disintegrate with the election of 1948, which was followed by a deviating election in 1952. The election of 1960, followed by the strongly reconstitutive election of 1964, probably had the potential for developing into an enduring realignment. However the New Frontier-Great Society brand of neo-New Dealism fell victim to the same virus as Wilson's New Freedom, entanglement in an overseas war. The election of 1968 then was classified as a disintegration of the temporary alignment effected by the Kennedy and Johnson elections.

While these conditions of electoral stability indicate that the electorate is "ripe" for a shift of allegiance to a new ideological paradigm, recent trends in the behavior of the political parties suggest that implementation of a dominant paradigm may be difficult to achieve. As stressed throughout this dissertation, one necessary characteristic of a paradigm shift is that at least one of the parties present a paradigm to the electorate for ratification. Yet in recent years parties have tended to shy away from ideological conflict towards an emphasis on "selling" their

candidates to the voters. This phenomenon has been documented by Joe McGinniss in The Selling of the President 1968. While many consider McGinniss' comments to apply only to the Nixon campaign, McGinniss makes explicit his contention that the Humphrey campaign was dominated by similar techniques, although Humphrey's security was a little tighter than Nixon's.

The popularity of the "packaged candidate" approach has reached the absurdity where advertising agencies have been known to advertise for "ideal" candidates for Congress, state houses, etc. The implications of this type of political behavior which can be derived from a consideration of the theory of political paradigms are not encouraging. Kuhn notes that lengthy periods of the absence of a dominant paradigm in the scientific community have been marked by near chaos. The possibility exists at least that this phenomenon could be true as well of the long absence of a dominant paradigm in the political community. At the time of this writing in 1971, the social and economic trends in this country suggest that a societal crisis of the magnitude required to effect a paradigm shift may be imminent, if not existent. The consequences of a failure of political parties to adequately respond to such a crisis with a comprehensive ideologically based plan of action, or paradigm, cannot of course be predicted, but they clearly deserve to be weighed

by those responsible for proposing the future of the American political community.

NOTES

1. For an interpretation of the content of the Jacksonian paradigm of political laissez-faire see Alan P. Grimes, American Political Thought (New York: Holt, Rinehart and Winston, 1966), 184-187.
2. For a more complete discussion of the issue-distances between the candidates mentioned see Elting Morison, "The Election of 1860," in Arthur M. Schlesinger, ed., History of American Presidential Elections, 1789-1968 Volume II (New York: McGraw-Hill, 1971), 1097-1122.
3. For example see Lowi, op. cit., who argues that the paradigm was in the process of final breakdown in the late 1960s..
4. Arguments for the periodicity of realignments are contained in Burnham, op. cit. and Sellers, op. cit.; arguments opposing the necessary periodicity appear in Pomper, Elections in America and in Pomper, "Classification of Presidential Elections."
5. See Table 2 for data sources on election characteristics and Appendix II for data sources on societal change phenomena.
6. See Hugh Douglas Price, op. cit., and W. S. Robinson, "Ecological Correlations and the Behavior of Individuals," American Sociological Review 15 (1950), 351-357.
7. James B. Conant, Science and Common Sense (New Haven: Yale U. Press, 1951).

APPENDICES

APPENDIX I

A MATLAN PROGRAM FOR ESTIMATION OF FACTOR SCORES^a

Program Statements (Source Deck):

```
1.  MAIN
2.    READ (UNIQUE, FACTOR, Z)b
3.    INV UNIQUE, X1
4.    TRANS FACTOR, X2
5.    MULT X1, FACTOR, X3
6.    MULT X2, X3, X5
7.    INV X5, X6
8.    MULT FACTOR, X6, X7
9.    MULT X1, X7, X8
10.   MULT Z, X8, X9
11.   WRITE (X9) _NOTITLE, FORMAT=_A
12.  END
```

Format for Data Entry:

```
1      XXXXX____n_*_n  (where XXXXX is the name of the
                        matrix and n is the row and
                        column dimension)
2      The data cards are next entered, with data punched
      row-wise, decimals punched, and a blank left between
      each data observation. )
3  END (Where the END statement that follows the data cards must
      begin in column 1. (This is the only column placement
      requirement in the program. )
4  /*
```

^aMATLAN is a variant of FORTRAN IV and is generally supported by most FORTRAN IV compilers, although a MATLAN execute statement is usually required.

^bThe names UNIQUE, FACTOR, and Z are arbitrarily selected descriptors for the matrices, respectively,

Notes on Program Implementation:

Job control cards are not described above as they are generally unique to the installation. The format described for data entry must be followed for each of the four matrices to be entered, i. e., four separate matrix identification cards and four separate end cards. The "/"* card only follows the last matrix to be read.

Estimation Formula Employed:

The formula employed for estimation of the factor score matrix \hat{F} , is that developed by M. S. Bartlett:^c

where Z is a matrix of original variables standardized as z-scores, S is the specific variance matrix calculated by subtracting of the final reduced correlation matrix from the original correlation matrix, and L is the factor loading matrix on which the factor scores are desired.

^b described in the computational formula cited above. If used in the Read statement they must also be used to identify these matrices on the first data entry card for each respective matrix.

^c See Morrison, op. cit., 293.

DATA SOURCES FOR VARIABLES LISTED
IN TABLE 5

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<u>Variable Number</u>	<u>Source</u>
5.	<u>Ibid.</u>
6.	Historical Statistics: Series D772; <u>Statistical Abstract: Table 53.</u>
7.	Historical Statistics: Series B155, B129 (NOTE: prior to 1900 the death rate is for the State of Massachusetts only); <u>Statistical Abstract: Table 53.</u>
8.	Data for the years 1860-1896 were obtained from A. D. Frenay, <u>The Suicide Problem in the United States</u> (Boston: Badger, 1927); data for the later years were obtained from <u>Historical Statistics: Series B128 and Statistical Abstract: Table 73.</u>
9.	<u>Ibid.</u>
10.	<u>Historical Statistics: Series B273, B274; Statistical Abstract: Table 100.</u>
11.	Historical Statistics: Series C5, C7; <u>Statistical Abstract: Table 37.</u>
12.	<u>Ibid.</u>
13.	<u>Historical Statistics: Series C88; Statistical Abstract: Table 128.</u>
14.	<u>Ibid.</u>
15.	Historical Statistics: Series H539, H541, H543; <u>Statistical Abstract: Table 50.</u> (Data are for Presbyterian, Methodist and Southern Baptist sects only).
16.	<u>Historical Statistics: Series R142; Statistical Abstract: Table 743.</u>
17.	Richard C. Bain, <u>Convention Decisions and Voting Records</u> (Washington: Brookings, 1960) and Schlesinger, ed., <u>op. cit.</u>

<u>Variable Number</u>	<u>Source</u>
18.	<u>Ibid.</u>
19-21.	These three variables measure the amount of congruence or incongruence between the two major party platforms. They were originally developed by Gerald Pomper and are more fully described in his <u>Elections In America</u> , <u>op. cit.</u> The content analysis technique employed in the derivation of these variables is described in an appendix to that work. The original platforms themselves are contained in Schlesinger, ed., <u>op. cit.</u>
22.	Schlesinger, ed., <u>op. cit.</u>
23.	<u>Ibid.</u>
24.	<u>Ibid.</u>
25.	<u>Historical Statistics: Series Y139, Y142; Statistical Abstract: Table 543.</u>
26.	<u>Ibid.</u>
27.	U. S. Congress, <u>Presidential Vetoes</u> (Washington: Government Printing Office, 1961), and <u>Statistical Abstract: Table 545.</u> (Vetoes by lame duck incumbents and vetoes of bills for the relief of specific individuals were excluded from the analysis.)
28.	<u>Ibid.</u>
29.	<u>Historical Statistics: Series Y129, Y132; Statistical Abstract: Table 544.</u>
30.	Schlesinger, ed., <u>op. cit.</u>
31.	<u>Historical Statistics: Series Y355; Statistical Abstract: Table 562.</u>
32.	<u>Historical Statistics: Series Y351, Y352, Y353; Statistical Abstract: Table 562.</u>

<u>Variable Number</u>	<u>Source</u>
33.	<u>Historical Statistics: Series Y264; Statistical Abstract: Table 564.</u>
34.	U. S. Department of Commerce, Bureau of the Census, <u>Long Term Economic Growth</u> (Washington: Government Printing Office, 1966): Series B43. (NOTE: Hereafter variables derived from this source will be referred to as derived from <u>Economic Growth</u>); and <u>Statistical Abstract: Table 170.</u>
35.	<u>Historical Statistics: Series Y763; Statistical Abstract: Table 384.</u>
36.	<u>Historical Statistics: Series F4, F16; Statistical Abstract: Table 470.</u>
37.	<u>Economic Growth: Series A15, A16; Statistical Abstract: Table 1113.</u>
38.	<u>Historical Statistics: Series E1, E13, E25; Statistical Abstract: Table 517.</u>
39.	<u>Historical Statistics: Series E113, E148; Statistical Abstract: Table 523.</u>
40.	<u>Historical Statistics: Series D574, D604, D696; Statistical Abstract: Table 344.</u>
41.	<u>Historical Statistics: Series K125, K139; Statistical Abstract: Table 929.</u>
42.	<u>Historical Statistics: Series V1; Statistical Abstract: Table 740.</u>
43.	<u>Historical Statistics: Series V2; Statistical Abstract: Table 740.</u>
44.	<u>Ibid.</u>

<u>Variable Number</u>	<u>Source</u>
45.	<u>Economic Growth: Series B81; Statistical Abstract:</u> <u>Table 677.</u>
46.	<u>Ibid.</u>
47.	<u>Economic Growth: Series B74, B75; Statistical</u> <u>Abstract: Table 1100.</u>
48.	<u>Ibid.</u>
49.	<u>Historical Statistics: Series R170, R176; Statistical</u> <u>Abstract: Table 765.</u>
50.	<u>Historical Statistics: Series W52, W53; Statistical</u> <u>Abstract: Table 772.</u>
51.	<u>Historical Statistics: Series W57; Statistical Abstract:</u> <u>Table 772.</u>
52.	<u>Historical Statistics: Series W66; Statistical Abstract:</u> <u>Table 814.</u>
53.	<u>Historical Statistics: Series M78; Statistical Abstract:</u> <u>Table 1022.</u>
54.	<u>Historical Statistics: Series M207; Statistical Abstract:</u> <u>Table 1054.</u>

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William Leonard Shade was born January 19, 1945, at Wilkes-Barre, Pennsylvania. In June, 1962, he was graduated from the Scranton Preparatory School, Scranton, Pennsylvania. In June, 1966, he was awarded the degree of Bachelor of Arts with a major in Government by Georgetown University, Washington, D. C. From 1966 until 1968 he was employed as a Military-Economic Research Analyst by the Central Intelligence Agency. During this same period he pursued graduate work in Economics at the University of Maryland. From 1968 until July, 1969, he was employed as a Planning Analyst in the Car Product Planning Office of the Ford Motor Company. In September, 1969, he enrolled in the Graduate School of the University of Florida. He worked as a graduate assistant in the Urban Studies Bureau from September 1969 until June 1971. He received the degree of Master of Arts with a major in political science in March, 1971, and since then has pursued additional work toward the degree of Doctor of Philosophy.

Mr. Shade is married to the former Mary Lenora Ludgate, and is the father of two children, William Leonard, III, and

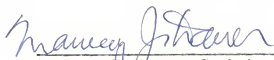
Elizabeth Mary. He is a member and past president of the Association of Political Science Graduate Students of the University of Florida, and is a member of Pi Sigma Alpha and past president of its Beta Gamma Chapter, University of Florida.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.




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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.




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Associate Professor of Anthropology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



David T. Hughes
Assistant Professor of Statistics

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


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This dissertation was submitted to the Department of Political Science in the College of Arts and Sciences and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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